Royal Belgian Society for Surgery

Abstracts of Lectures
1. — LAPAROSCOPY AND SMALL BOWEL OBSTRUCTION
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Acute Small Bowel Obstruction (ASBO) remains a significant surgical problem and is commonly caused by post-operative adhesions. Colorectal surgery and vertical incisions are more frequently producing intestinal obstruction (rate of ASBO: 3.6% at 3 years time interval) and predispose to multiple matted adhesions rather than an obstructive band. (1, 2).

In a retrospective study, it seems that ASBO requiring hospitalization with conservative management occurs less frequently after laparoscopic bowel resection than after open surgery. However, the need for surgical release of ASBO is similar (3).

Oral water-soluble contrast is a useful predictive test for non-operative resolution of adhesive ASBO. The appearance of contrast in the caecum on an abdominal radiograph within 24 hours of its administration predicts resolution of an obstruction with a sensibility and specificity of 96%. However Gastrografin is only a predictive test and does not cause resolution of ASBO (4). In the absence of clinical and CT signs of acute intestinal ischemia requiring an urgent operation it seems to be safe to attempt a non-operative management of ASBO. When non-operative treatment is unsuccessful, emergency surgery is required.

According to the EAES (European Association of Endoscopic Surgery) recommendations, in case of clinical and radiological evidence of small bowel obstruction non-responding to conservative management, laparoscopy may be performed using an open access technique (GoR C). If adhesions are found at laparoscopy, cautious laparoscopic adhesiolysis can be attempted for release of small bowel obstruction (GoR C) (5).

There are no prospective randomized trials comparing open and laparoscopic adhesiolysis for ASBO. The benefits of laparoscopic approach in ASBO that have been reported in case series and in one retrospective matched-pair analysis are the same as in laparoscopy for other conditions: quicker return of intestinal function, lower morbidity, shorter hospital stay (2). However, laparoscopic adhesiolysis in emergency has not gained wide acceptance because of the limited visualization of the abdominal cavity secondary to the distended bowel and because of the risk of iatrogenic intestinal injury. The high conversion rate is also an issue, ranging from 15 to 43%. The best cases for laparoscopic approach are patients with moderate abdominal distension (proximal obstruction), a bowel diameter not exceeding 5 cm, a few adhesions and a limited number of previous scars (6).

From 2000 to 2004, 151 patients were admitted for ASBO in the Department of Surgery of St Joseph Hospital in Gilly, of which 98 were due to bands/adhesions. Among these 98 patients, 69 were treated surgically and a laparoscopic approach was attempted in 28 with 5 conversions. Only 23 patients admitted for adhesive ASBO were treated laparoscopically (23%).

In order to limit the risk of injury to the underlying adherent bowel, open Hasson technique is required to enter the abdominal cavity. Instrumental manipulation of fragile dilated bowel loops should be avoided. It is recommended to run the flat small bowel with atraumatic graspers from the ileo-caecal valve until the site of obstruction is found. Only pathologic adhesions should be cut. In case of any doubt about the viability of the bowel, a minilaparotomy can be performed for checking the intestinal blood supply and if necessary bowel resection (6).

Finally, many ASBO may be treated conservatively. However, surgery must not be delayed in the presence of clinical and radiological signs of severity at admission or in case of no response to medical treatment. The choice between laparoscopic and open approach is mainly depending on the local expertise.

References
3. — PRIMARY ANASTOMOSIS OR HARTMANN’S PROCEDURE FOR PATIENTS WITH DIVERTICULAR PERITONITIS.
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In presence of a perforated diverticular disease with peritonitis, a suture carries an increased risk of postoperative leakage. This is the reason why it has been currently advocated to refrain from doing any suture, giving the preference to the Hartmann’s procedure. Nevertheless, the terminal colostomy constructed during Hartmann’s is troublesome and the redo surgery to restore continuity frequently a difficult operation. The possibility to perform a primary anastomosis is therefore repeatedly considered, with or without a discharge stoma to minimize the consequences of a potential leakage. The problem remains the criteria of choice between these options.

Several factors are classically considered as increasing the risk of a suture:

- The local septic status: it was classified by Hinchey (1) in four grades: pericolic abscess (grade I), pelvic abscess (II), purulent generalized peritonitis (III), faecal peritonitis (IV). Medical treatment ± percutaneous drainage followed by delayed surgery is most frequently possible in grades I/II. In grade III, the choice between Hartmann’s or a protected suture may exist, while in grade IV Hartmann’s is strongly recommended by all the consensus conferences (2, 3).
- The general status of the patient: the worse, the stronger the indication for a Hartmann’s procedure.
- The absence of emptiness of the bowel: recent studies have repeatedly reported that bowel preparation seems to be unnecessary before colonic surgery. This should not be considered a criterion for discharge anymore, neither Hartmann’s nor protective stoma.
- Associated conditions, as colovesical or colovaginal fistulae, could be a reason for protective stoma.
- The experience of the surgeon, implying both the technical expertise and the clinical experience and judgement.

The surgeon’s decision concerning the type of procedure will be frequently taken during surgery, depending on all the factors mentioned here above. The patient should be made aware of the various possibilities prior to surgery.

Conclusions. In spite of the consensus recommendations, it remains a large room for surgeon’s evaluation. In emergency surgery, safe and life-saving procedures should always be favoured.

References

7. — MANAGEMENT OF COMPLICATED APPENDICITIS.
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Appendectomy is one of the most common surgical emergency procedures. The laparoscopic approach has gained popularity however as yet it is not the “golden standard”. Nevertheless it appears that in recent studies the laparoscopic route can facilitate appendectomy in cases of complicated appendicitis that is to say gangrenous appendicitis, local and generalised peritonitis, and concomitant small bowel obstruction. In all these procedures, the laparoscopic approach provides several advantages:

- Gangrenous appendicitis: In cases of gangrenous appendicitis, thanks to the quality of modern video systems, the appendiceal stump can be seen very clearly and the decision to place a standard ligature or perform stapling of the stump can be taken in optimal conditions.
- Local abscess: In cases where there is a local abscess, dissection may be performed laparoscopically very safely. The advantage of the laparoscopic route is that the bowel can be visualised and mobilised as required which may not be possible through a short McBurney incision.
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– **Generalized peritonitis**: In cases of generalized peritonitis, the laparoscopic approach allows complete visualisation of the abdominal cavity with the ability to aspirate and irrigate from the diaphragm to the Pouch of Douglas. This may not be possible through a McBurney incision.

– **Difficult or atypical position of the appendix**: In cases of an ectopic or retrocaecal appendix, the laparoscopic approach is the easiest way to manage acute appendicitis without enlarging the incision.

**Discussion.** The laparoscopic approach allows the surgeon to visualise all the intra-abdominal contents and to offer patients a thorough irrigation of the entire peritoneal cavity. Furthermore, laparoscopy has demonstrated its good immunological post-operative status and most studies show few complications related to the procedure. It also results in excellent cosmesis.

The main limit of the laparoscopic approach for complicated appendicitis remains the lack of surgical expertise or equipment in emergency conditions. When this is available, laparoscopic appendectomy demonstrates numerous advantages compared to the open approach. Therefore, it should be routinely performed in all cases of acute appendicitis.

8. — **WHEN TO REMOVE A NORMAL LOOKING APPENDIX?**

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Despite refinements in imaging technology, the appendix will appear normal with no other identifiable intra-abdominal pathology in approximately 10-15% of patients with a clinically high probability of appendicitis in which surgery is performed (Gastroenterology 2002; 123:992–998).

Controversy exists in the literature regarding the role of appendectomy in this circumstance. Often cited arguments in favour of removal of a normal appearing appendix include: possible presence of ‘endo-appendicitis’; risk of recurrent symptoms, and risk of a small appendiceal tumour that would otherwise have been missed.

Others have argued that removal of a normal appendix is associated with a 6% morbidity and 2% reoperation risk (*Dig Surg*, 2003; 20:115-121). Moreover, in a prospective follow up of patients in whom a normal appendix was left in place, recurrent abdominal pain was uncommon (*Eur J Surg*, 2002; 168:349-54). Finally, recent data suggest that appendectomy can alter the natural history of, amongst others, inflammatory bowel disease and therefore one should be reluctant to remove the ‘normal’ appendix in the paediatric population.

The discussion is hampered, however, by the fact that in the cited literature the percentage of laparoscopic appendectomy was quite low or not stated.

A clear guideline therefore cannot be offered and the decision to remove the normal ‘appendix’ should be discussed with the patient before surgery and take into account his or her specific circumstances such as age, presence of IBD and other associated morbidity.
15. — TWENTY FIVE YEARS OF ESOPHAGEAL CANCER SURGERY: IMPACT OF A SURGICAL DATABASE ON MULTIDISCIPLINARY APPROACH.

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Introduction. Resection surgery is still the treatment of choice for fit patients with localised carcinoma of the thoracic esophagus and cardia. In the last decade, neoadjuvant chemo-radiation plus surgery has become indicated in patients with locally advanced (T3 N+ & T4 anyN) carcinomas. Since 1980 we have observed more than 4500 patients with cancer of the esophagus and cardia. The aim of the study is to evaluate the results obtained in more than 2000 consecutive patients with cancer of the thoracic esophagus and cardia who were operated on at our institution from 1980 to 2004.

Methods. From 1980 to 2004, 2014 patients with cancer of the thoracic esophagus and cardia were operated on at our institution. Esophago-gastric resection and gastric pull-up at the apex of the chest was the operation of choice for tumors of distal two thirds of the esophagus and for Siewert type I and II tumors of the esophago-gastric junction. Total gastrectomy plus segmental distal esophageal resection and esophago-jejunostomy was used in Siewert type III tumors of the cardia. Transthoracic esophagectomy and gastric pull up into the neck was the operation of choice for tumors of the upper thoracic esophagus. Transhiatal esophagectomy was reserved mostly to patients in whom thoracotomy was contraindicated. The stomach and jejunum were the preferred esophageal substitutes, and colon interposition was a second choice option. Intrathoracic anastomoses were performed using a circular stapler, whereas cervical anastomoses were manual (termino-terminal, continuous 4-0 absorbable suture). Our disease-oriented multidisciplinary team is based on the cooperation of the surgeon, endoscopist, medical oncologist, radiotherapy oncologist, anaesthetist, intensivist, nutritionist, gastroenterologist and pathologist. Patient’s and tumour data have been collected and updated prospectively in a dedicated database, and data from this database have been used continuously as a feedback monitoring system to improve patient’s management and results. Patients were grouped into 3 cohorts based on the observation period: Group A from 1980 to 1987 (817 pts.), Group B from 1988 to 1995 (665 pts.), Group C from 1996 to 2004 (532 pts.).

Results. Three hundred and seventy seven patients (19%) underwent neoadjuvant preoperative chemotherapy or chemo-radiation (Group A 5.5%, Group B 25%, Group C 31%; p < .0001). Over the years, more and more patients underwent transthoracic esophagectomy rather than transhiatal esophagectomy (p < .0001), intrathoracic rather than cervical anastomosis (p < .0001), extended rather than limited lymph node dissection (p < .0001).

A complete R0 resection was possible in 1584 (79%) patients (Group A 74%, Group B 75%, Group C 90%; p < .0001), whereas an incomplete R1-R2 resection was performed in 430 patients (21%).

Over the years, despite a greater number of dissected lymph nodes (p < .0001), more patients had all the lymph nodes in the operative specimen negative (pN0) (p < .0001). Over the years, more patients had a pStage 0-1-2 tumor rather than an advanced pStage 3-4 tumor (p < .0001).

In-hospital postoperative deaths were reduced significantly (p < .0001) during the study period: 8% (65/817) in Group A, 6.3% (42/665) in Group B, and 2.2% (12/532) in Group C. In the last 5 years, postoperative death rate dropped to 1% (3/327) in patients undergoing gastric pull-up or esophago-jejunostomy.

Since decreasing the risk of a treatment expands its indications, the consequence was that postoperative morbidity (including all major and minor complications, both surgical and medical), did not change significantly in the 3 observation periods: Group A 44% (361/817), Group B 45% (297/665), Group C 42% (224/532). However, fatal postoperative complications were reduced significantly over time (p < .0001) thanks to an appropriate multidisciplinary management: 17.5% (65/361) in Group A, 14.4% (42/297) in Group B; and 5.3% (12/224) in Group C.

Anastomotic complications (including both clinical and asymptomatic/radiological leakages, and necrosis of the esophageal substitute) were significantly reduced (p < .01): 11.6% (95/817) in Group A, 12.6% (84/665) in Group B, and 5.6% (30/532) in Group C. Anastomotic complications were fatal in 21/95 (22%) patients in Group A, in 16/84 (19%) patients in Group B, and only in 2/30 (6.7%) patients in Group C. No patient with anastomotic complications after R0 resection and gastric pull up or esophago-jejunostomy (23/449, 5.1%) died during the last 9 years.

Continuous interaction with the data in our database led us to several changes in patient’s management/care, i.e. systematic en-bloc ligation of the thoracic duct (no more postoperative chylothorax in the last 5 years), improved management of postoperative complications, chest drain removal anticipated on postop. day 4 (rather than after the gastrografin swallow), postoperative fast tracking with the gastrografin swallow performed on postop. day 5 for intrathoracic anastomoses (instead of on postop. day 7) and on postop. day 7 for cervical anastomoses (instead of on postop. day 10) and, accordingly, earlier oral re-alimentation and hospital discharge.
Overall 5-year and 9-year survival (hospital deaths included) were significantly improved (p < .0001) during the study period: 19% & 14% in Group A, 23% & 17% in Group B, 35% & 28% in patients operated from 1996 to 1999, and 51% & n.a. in those operated from 2000 to 2004.

The 5-year and 9-year survival after R0 resections (hospital deaths excluded) were: 26% & 19% in Group A, 31% & 22% in Group B, 40% & 33% in patients operated from 1996 to 1999, and 57% & n.a. in those operated from 2000 to 2004 (p < .0001).

Conclusions. Surgery remains the standard of care for fit patients with a potentially resectable cancer of the esophagus and cardia. Multidisciplinary approach to the esophageal cancer patient, increased experience, and refinements in surgical technique and perioperative care led to a significant reduction in postoperative mortality and a significantly improved long-term survival. Since 1980 our computerized database has been of the utmost utility as a feedback monitoring system to improve patient’s management and results.

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Background-Objective. It has been suggested that early T1 adenocarcinomas have a less aggressive behavior as compared to T1 squamous carcinoma, therefore justifying less aggressive surgery i.e. limited lymphadenectomy in T1 adenocarcinoma. The objective of this study is to analyse the oncologic behavior of T1 squamous – and adenocarcinoma and to identify prognostic factors after surgical therapy.

Methods. 200 consecutive patients (133 adenocarcinomas – 90% being Barrett carcinomas – 67 squamous carcinomas) operated between 1990 and 2003. Prognostic factors were determined by multivariate analysis.

Results. Cancer specific 5 and 10-year survival were for adenocarcinoma: 91.8% and 82.3% ; for squamous carcinoma: 79.8% and 69.7% (p = 0.047). Thirty seven patients – 19 adenocarcinomas (17%) and 18 squamous carcinomas (40%) (p = 0.02) – presented with a synchronous or metachronous primary tumor.
When excluding this group the two tumor types showed similar overall (p = 0.41), lymph node positive (p = 0.6), lymph node negative (p = 0.6) survival curves.
Lymph node metastasis occurred significantly more in squamous cell carcinoma (p = 0.009) but pattern of lymph node spread was identical i.e. upper half of mediastinum and cervical region being involved in 30% in each tumor type. Adenocarcinomas showed a high tendency of skip metastasis (p = 0.18).

Conclusion. The difference in survival between T1, adenoc- and squamous cell carcinoma was in this study determined by second synchronous/metachronous primary cancer and not by tumor type.
The pattern of lymphatic spread and the higher tendency for skip metastasis in adenocarcinoma in our opinion favors extended lymphadenectomy and opposes limited lymphadenectomy in adenocarcinoma.
17. — SURGICAL RESEARCH IN THE MULTIDISCIPLINARY ARENA.
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Surgical research increasingly involves various and diversified disciplines as modern surgery evolves through the 21st century. An obvious example of multidisciplinarity in surgical research is the combination of surgery and adjuvant treatments in the care of patients with cancer. However, modern surgical research also impinges on the extramedical multidisciplinary arena, topic upon which I would like to expand here before you. Knowledge of epidemiology and statistics as well as basic notions in the field of computer science are essential today to understand how research can contribute to surgical expertise in correct decision-making, good practice principle-based and pertinent pre and post-operative care. Evidence-based practice is a prerequisite to appropriate and pertinent care: sorting out the evidence from the ocean of literature requires basic notions of epidemiology, calculation and understanding of information indices as well as their applications, whether we look at diagnostic tests, therapeutic effects, or adverse events. Critical appraisal of the literature requires statistical notions such as understanding the pragmatic or explanatory approaches to analysis, when to use and how to interpret “p” values and confidence intervals, an essential step toward distinguishing between statistical and clinical significant differences. Faced with immense amount of literature available, one of the most formidable challenges for the surgeon today is to be able to distinguish between the renown of the authors, stemming mainly from their aura or prestige, and their scientific value. Last, when to accept and when to refuse conclusions drawn from clinical studies in the literature are probably one of the most difficult exercises for a surgeon to make. Another rapidly developing discipline that the modern clinical researcher cannot ignore any longer is the comprehension of basic economics (cost analysis, cost-effectiveness and cost-utility analyses), ergonomics. Examples are provided.

21. — TWENTY-FIVE YEARS OF EXPERIENCE IN A PEDIATRIC MEDICO-SURGICAL UNIT: SUCCESSES, PITFALLS, EVOLUTION.
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Once upon the time… At the origin, related to our education as surgeon (F.C) as central character for the complete management of surgical pathologies or as pediatrician (M.H.) as general manager of the child, we lived in separate departments with compartmenting of the ideas, the tools and the minds…opened just for opportunistic advices. Considering that the child was our central and common interest, we convinced our medical environment that the future was to collaborate with an integration of the pediatric care from assessment, diagnosis of the uropathies to surgery and later follow-up including eventual ESRD. Confronting our different ways of thinking, we rapidly found a common interest in sharing our views and references from the literature about the natural history of uronephrologic diseases, common protocols, long-term series and… the limits of each other’s possibilities. Pediatricians had no idea about what we can really do or not, and how, but know a lot about the physiopathology and metabolic aspects of the uropathies that we have to consider for the protection of the renal function. Our skills can help them giving an adequate explanation to the child and his family. After a (relatively long and animated) period of adaptation, the confidence grew as it clearly appeared that the surgeon could not be replaced in his fundamental role as operator and pre and postoperative manager but can receive a tremendous scientific aid and assistance considering the medical opinions and references. The help concerns also fields that are not his immediate interest (assessments, collecting results, urodynamics,…).

Every specialist finds his complementary role as decisions need to be discussed during weekly multidisciplinary meetings. The recruitment of patients increases as other pediatricians know that they can address the children to a complete board of specialists in the field (including radiology, isotopes, urodynamics, endocrinology, oncology, genetics, pathology,….) but also specialised paramedical care (nursing, psychology, kinesitherapy, stomatherapy, children animations …). At the same time, large international series demonstrate the interest of sharing the results and conclusions about our common pathologies (ie: evolution of vesico-urinary reflux, hydronephrosis, voiding dysfunctions,….) regarding the results of different and sometimes opposite attitudes between pediatric surgeons or urologists and pediatricians.
The evolution led to a less aggressive and more adequate surgery. The common environment (nurses, paramedics,…) in the same adapted rooms (hospitalisation and outpatient clinics) increased rapidly the confidence of the children and their parents. This decreases the stress and betters the management of perioperative care during day…and night. The surgeon has to find a new place into a multidisciplinary team but he remains the central character concerning the surgery itself. He is still the only responsible (including on medicolegal point of vue) for these acts and is never restricted to a technical role. But he has a tremendous benefit in his daily collaboration with his pediatric colleagues: intellectual benefit (complementary knowledge including common publications), psychologic benefit (better relations, avoid sterile and undue critics), but also in his daily confort. Reciprocal confidence cannot be dictated by rules or decisions but is a long common work and needs daily care but brings longtime and multiple benefits. With the child as central character… We are greatly grateful to our team.

22. — THORACOSCOPIC EXPLORATIONS IN CHILDREN : EXPANDING INDICATIONS.

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Video-assisted thoracic surgery (VATS), has been used in humans since the turn of last century. It is only in the seventies that VATS could find some applications in children, when Rodgers introduced it to perform small biopsies and decortications. Today, thanks to continuous technological advances and refinements in techniques, VATS has gained a wide range of indications in children. VATS mainly deals with diseases of the oesophagus, the diaphragm and the lungs, including tumors and metastasis, thoracic infections and thoracic wall malformations. Unquestionable advantages of VATS include an improved cosmesis and avoidance of thoracotomies with prevention of functional disorders of the thorax and shoulder. Other presumed benefits, such as less postoperative pain and fewer complications, still require systematic randomised studies, however. The aim of this presentation is to give a non-exhaustive general overview of various feasible VATS procedures in children.
26. — DOES EVERY INGUINAL HERNIA NEED A REPAIR?
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It is generally accepted that most inguinal hernias should be repaired electively. The reasons surgeons tend to give are the risks of a hernia accident (incarceration and/or strangulation) or the treatment of symptomatology (pain). There are important differences in hernia repair ratios between European countries which probably reflect the differences in indications and guidelines among the surgical communities.

It is estimated that the hernia incidence in males is 7/1000 population per year while the risk of a hernia accident is 3/1000 hernia patients per year. The mortality of an elective repair (0.2%) is much lower than of a repair for strangulation (5%) but does not reach zero. Elective inguinal hernia repairs even carry a risk of recurrence (2-10%), short-term complications (5-20%) and chronic inguinal pain (3-15%).

From these epidemiological data, it can be calculated that, even when every inguinal hernia should be operated and hence no incarceration should ever occur, this would result in a paradoxical reduction of life expectancy due to the high number of hernia repairs.

Based on the evidence provided by the literature, it is safe to recommend that symptomatic or minimally symptomatic inguinal hernias should receive a conservative treatment, while a repair should be proposed whenever the hernia gets symptomatic.

28. — EXTRAPERITONEAL MESH FOR INGUINAL HERNIA REPAIR: IS A FIXATION MANDATORY?
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Total extraperitoneal repair (TEP) can be performed with low morbidity and mortality and a high level of patient satisfaction. The recurrence rate is low and comparable with open repair.

To prevent migration of the mesh, surgeons have fixed the mesh in place using laparoscopic stapling devices, suturing techniques, or adhesives. However, fixation can cause specific complications, such as nerve entrapment syndromes and osteitis pubis. Fixation also increases the costs of the procedure.

Is a fixation mandatory?
29. — INGUINAL HERNIA REPAIR : IS KUGEL THE BEST OF BOTH WORLDS ?
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Background. The Lichtenstein technique is still considered the golden standard for inguinal hernia repair, although challenged by endoscopic techniques. Both techniques are based on the tension-free principle and use a non-absorbable mesh. Tension-free mesh repair has significantly reduced recurrence, postoperative pain and reconvalescence. The anterior inguinal approach however, is criticized because of the sometimes extensive dissection of the cord with the possibility of injury to the ilioinguinal or iliohypogastric nerve and consequently ischemic orchitis, epididymitis and neuralgia. Endoscopic techniques are criticized because of the need for general anesthesia, higher cost, difficulty and higher rate of serious complications. In the late nineties Kugel presented a new minimally invasive technique, combining some advantages of the preperitoneal placement of the mesh, reduced postoperative pain and the possibility to perform the procedure under locoregional anesthesia.

Aim. Should the Kugel technique be the therapy of choice for inguinal hernia repair?

Material and methods. A prospective comparative study between TEP and Kugel repair for unilateral inguinal hernia was started in July 2005. All patients with unilateral inguinal hernia were given the option to choose their surgical therapy. Patients gave written informed consent. All procedures were performed by one surgeon. Demographic variables, co-morbidity and procedure-related factors were recorded. Primary end-points were pain according to the VAS-score and paresthesia at 1 and 3 weeks, 3 and 6 months. Secondary end-points were time to discharge, operation time and time to restart of all daily activities. All data were recorded in Microsoft Excel 2003 and analysed using JMP 6.0 (SAS Institute, Cary, NC, USA). Finally, the data were compared with data obtained from a Pubmed literature search.

Results. The results of the analysis will serve as platform for the discussion.

Conclusion. The Kugel repair offers similar results with less postoperative pain versus the TEP repair and serves as a valid alternative for the conventional Lichtenstein technique.

30. — TROCAR SITE HERNIA : WHAT IS THE INCIDENCE ? HOW TO PREVENT ?
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Trocar site hernia is defined as the development of a hernia at the cannula insertion site after a laparoscopic procedure. With the increasing number of such procedures, the greater number of trocars and their larger diameter, trocar site hernia occurrence has been more frequently observed. Its overall incidence is evaluated around 1%. We reviewed the recent literature concerning this subject to help to define its appropriate prevention and management.

Several risk factors have been identified for the development of trocar site hernias. Many authors frequently point out that the main pathogenesis factors are not the usual host risk factors for incisional hernias (obesity, diabetes mellitus, denutrition or corticotherapy), but rather technical ones. Most authors assert that a large trocar size, leaving the fascial defect open, and stretching the port site, were closely related to the occurrence of this complication. The onset of the symptoms could range from a few to several months after intervention but they can occur within a few days after operation. A special consideration should be given to the Richter’s hernia, (partial enterocele) defined as the protrusion and/or strangulation of only part of the circumference of the intestine’s antimesenteric border through a rigid small defect of the abdominal wall. An effective way to prevent trocar site hernia is to close the fascial defect and peritoneum to obliterate the preperitoneal space when trocars of 10 mm or more have been used.
31. — CAN WE USE A MESH IN POTENTIALLY CONTAMINATED AREAS?
B. Van Geluwe*, P. Pattyn*, M. Miserez**.

The repair of abdominal wall defects in potentially contaminated or grossly infected fields present a challenging clinical problem. Historically, surgical tradition, supported by the literature, advise against the use of a non-absorbable mesh in these settings because of the unacceptable high risk of mesh infection and subsequent mesh removal. Recent studies however question this consensus. A particular clinical case personally observed is described, with a review of the literature. The objective is to present an organized approach for the treatment of abdominal wall defects in (potentially) contaminated areas. Several factors which might influence outcome are evaluated: the nature and the degree of contamination, the type of prosthesis, the surgical technique, the impact of antibiotics (prophylactic and/or therapeutic).

Conclusion: On the condition that an adequate surgical technique and antibiotic regimen is used to minimise infection risks, we suggest that the use of a non-absorbable abdominal wall prostheses is no absolute contra-indication in all contaminated operations.

32. — CAN VAC THERAPY IMPROVE SALVAGE OF INFECTED PROSTHESIS?
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Use of prosthetic biomaterials for repair of abdominal wall hernia defects show a significantly lower recurrence rate compared with primary fascial closure due to the tension free repair. The most commonly used prosthetic biomaterials are polypropylene and polytetrafluoroethylene (PTFE). However, implantation of permanent foreign material may increase the risk of post-operative infectious complications. Wound infections are a common post-operative complication and present a difficult challenge in the treatment when the mesh is involved. The standard surgical practice supports the removal of the prosthetic material. Unfortunately, the removal of a mesh is often technically difficult because of local tissue adherence. Achieving fascial closure after mesh removal is usually impossible and leaves you with an incisional hernia larger than the original defect.

We would like to focus on the type of wound infection were the mesh is no longer covered with tissue and is infected. In two of these cases we used the Vacuum Assisted Closing (VAC) technique combined with antibiotics and surgical debridement. In both these cases we became a complete closure of the wound with salvage of the mesh (both of which were light weight polypropylene meshes) within 3 months.

We performed a medline search that only showed a few case reports on this topic, with similar results, but no clinical trials where available.

VAC therapy associated with antibiotic therapy appears to improve the salvage of infected prosthesis. But does VAC improve outcome compared with antibiotics and debridement alone? The costs of VAC therapy are substantial but so are the costs for society associated with the prolonged morbidity of infected prostheses. These questions illustrate the need for further prospective studies.

Conclusion. Further studies are mandatory to evaluate the usefulness and cost-effectiveness of VAC therapy in the treatment of open wound infections with an exposed mesh. We think that prospective studies should be performed to improve treatment options and reduce morbidity.
33. — FAST TRACK IN COLONIC SURGERY, RESULTS OF THE AARHUS EXPERIENCE.
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A total of 135 patients were operated electively with open colonic surgery in a fast track set up at Aarhus Sygehus, Surgical Department P, Denmark.
The set up and background for sending patients home 2 days after surgery will be presented.
Our results focusing on reduced morbidity, mortality, and hospital stay compared to traditional surgery will be shown.
Several factors are important if a fast tract model shall succeed.
Patient compliance is important, however, the surgeon, the anaesthesiologist, and “the system” are often even more conservative.
Practical guidelines are discussed of the most important factors for implementation of the fast tract idea.

34. — THE ANAESTHESIOLOGICAL MANAGEMENT OF FAST TRACK COLONIC SURGERY.
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The principals which are necessary to be addressed by the anaesthetic team in fast track surgery of the colon, with dismissal of the patient on the second postoperative day include multimodal pain relief, multimodal anti-ileus treatment, restrictive fluid therapy, quickly eliminated anaesthetic agents and the minimization of surgical stress.
The imperative principal is to have an optimally organized, structured program, which, through teamwork around the patient, ensures a preoperative well-informed and educated patient, who understands what will happen every day post-operatively. The patient thus becomes an active participant of the team ensuring that the goals for mobilization, pain relief and nutrition are met.
36. — SURVIVAL OF RECTAL CANCER PATIENTS IN BELGIUM 1997-98 AND THE POTENTIAL BENEFIT OF A NATIONAL PROJECT.
C. Bertrand, on behalf of the PROCARE working group.
Hôpital de Jolimont, Haine-St-Paul, Belgium.

Background. Guidelines were developed in the context of PROCARE, a Belgian multidisciplinary project on rectal cancer (RC).

Aim. A population-based study on RC treatment and outcome in Belgium and comparison with recent international benchmarks in order to define targets that should be reached.

Patients and methods. Anonymous data of 3079 patients with rectal cancer registered in the National Cancer Registry in 1997 and 1998 were analysed. Observed (OS) and relative survival (RS) were compared with figures from nationwide projects and multicentre studies.

Results. The 5-yr OS and RS were respectively 46.6% and 58.5%. For patients with stage I – III tumours 5-yr OS was 57.1% and 5-yr RS 70.1%. Adjuvant or neoadjuvant treatment was given in 54.8% stage II-III patients who were < 70 years old. There were marked differences between the provinces in the use of radiotherapy for stage II-III patients and in 5-yr RS for all stages. In stage IV, the median OS was 13 months and the 2-yr OS was 28%. Comparison with recent multicentre trials indicate significant potential benefits of the PROCARE project: an absolute increase of the 5-yr OS by 10 to 20% after chemoradiotherapy and TME in stage II-III patients 75 years old or less, a 7 months increase of the median OS and an absolute 15% increase of the 2-yr OS in unresectable stage IV patients with combined chemotherapy.

Conclusion. Significant improvement seems to be achievable. Implementation of the PROCARE guidelines with quality assurance through prospective registration in a specific database, however, is a crucial prerequisite for credible audit of performance and feedback to individual teams.

38. — INTERACTION BETWEEN CANCER CELLS AND STROMA IN MALIGNANT TUMOURS.
M. Mareel.
Dept. Radiotherapy, Universitair Ziekenhuis, Gent, Belgium.

Genomic alterations in committed stem cells or their proliferating progeny initiate the accumulation of cancer cells. Progression into a malignant, i.e. invasive and eventually metastatic tumor, requires the participation of host cells which, together with the extracellular matrix, constitute the tumor stroma (1). The “seed” and “soil” theory launched by Paget at the end of the 19th century explains metastasis on the basis of interactions between organ-specific host factors and cancer cells (2). During the last decades cancer researchers have elucidated in some detail the molecular crosstalk between cancer cells and host cells. The latter comprises endothelial cells and pericytes, neurons, leukocytes and macrophages, fibroblasts and myofibroblast responsible for neoangiogenesis, innervation, inflammation and desmoplasia respectively. In many cancers, these elements all together account for about half of the tumor mass. Since most of these host cells, like the cancer cells, are invasive, the question arises who invades whom in malignant tumors? The molecular scenario says that the genomically altered cancer cells start the crosstalk. Cancer cells produce secretory factors, like VEGF (vascular endothelial growth factor), NGF (nerve growth factor), IL (interleukine) and TGF-β (transforming growth factor-β) recognizing their specific receptors on the host cells and leading them to accumulate in the tumor. Here the host produces factors like oxygen, prostaglandins, MMP (matrix metalloproteinase) and SF (scatter factor) modulating the signaling pathways that govern growth and invasion of the cancer cells. Host cells are useful targets for therapy, as exemplified by analgesic radiotherapy for bone metastasis, anti-VEGF (avastin) treatment of colon cancer and bosentan for fibrosis targeting osteoclasts, blood vessels and myofibroblasts respectively.

References
40. Panel — MULTIDISCIPLINARY ONCOLOGICAL CONSULT: DATA FROM HEALTH INSURERS.
M. Callens.
Christian Mutualities, Brussels, Belgium.

**Background.** Since February 2003, the nomenclature of medical acts in Belgium, provides a special reimbursement for a multidisciplinary oncological consultation (MOC). It can be used once a year for all types of cancer that need a multidisciplinary evaluation. The aim of this act was twofold. On the one hand, the legislator hoped to improve the quality of the treatment through a multidisciplinary approach. On the other hand, the written report of the consultation serves as the registration form for the clinical pathway of the cancer registration.

**Methods.** We analysed the data associated with the following medical acts: written report made by the coordinator of the MOC, members of the hospital participating in the MOC, and external members participating in the MOC.

We used data from the national institute of health insurance INAMI/RIZIV (2003-2004) and data from the Alliance of Christian Mutualities (2003-2005). The MOC can be performed once a year for the same patient when a multidisciplinary consultation between different specialisms is appropriate. Because the nomenclature makes no difference between the first diagnosis of cancer and a follow up case i.e. progressive disease or recurrence, it is not possible to evaluate how many new cases were discussed during a MOC. In Belgium, 50,000 new cases of cancer can be expected each year. In 2003 the coordinators performed 16,375 MOC related acts and in 2004 this number was 43,167 (source INAMI/RIZIV). The age distribution is similar to the results seen in cancer registration. In 2004, an MOC was coordinated by a surgeon 2777 times. MOCs were more frequently coordinated by radiotherapists, internists, and pathologists.

In 2003, there were 48,729 invoices for participants in an MOC and in 2004 this number already reached 144,521 (source RIZIV/INAMI). The latter included 18,323 invoices by a surgeon which were less frequent than participations from internists, radiotherapists, gynaecologists, urologists, and pneumologists. Note that a general practitioner only participated 2315 (1.2%) times to an MOC on a total of 191,997 participations in the period between 2003 and 2005 (source LCM). The INAMI/RIZIV budget increased from 2,178,594 Euro in 2003 to 6,079,977 Euro in 2004 (while a total cost of 3 million Euro was foreseen).

Since the implementation of the MOC, we see a net improvement of the cancer registration. Many hospitals use the financing of MOC to pay registration collaborators which improve quality and uniformity since they follow a specific training at the cancer registry. Another element is the obligation to participate in the cancer registration (also for cancer cases who are not discussed in a MOC). The participation of the hospital is also a condition for a recognition of an oncological care programme (since 25-4-2003) so that data are more complete.

**Conclusion.** MOCs are characterised by a fast growth since their introduction in 2003. Surgeons are important collaborators. Cancer registration has improved because of the MOC report which serves as the basis of the cancer registration file. Whether quality of care has improved because of the multidisciplinary consult needs to be further investigated. Linking data from cancer registration with data of the nomenclature could be a topic for future research in this field.

40. Panel — MULTIDISCIPLINARY BREAST CARE.
M.R. Christiaens.
Universitair Ziekenhuis Gasthuisberg, Leuven, Belgium.

In breast disease, not only treatment options for breast cancer are ideally discussed in a multidisciplinary way but also diagnosis has become more demanding. In the area of mass population screening for breast cancer, a correct diagnosis and defined diagnostic pathways are of the utmost importance since the majority of these women will not have a malignancy and do not need to be operated! Discussion with the radiologist and cyto-pathologist will spare a lot of over-diagnosis, unnecessary diagnostic surgical procedures and expensive additional imaging like breast MRI. When breast cancer is diagnosed, the extend of the disease has to be evaluated and correct treatment has to be described taking in to account the patients physical and psychological needs and expectations. Ideally, all decisions should be taken after team discussion, especially when upfront systemic treatment is to be considered.

The implementation of a regularly, multidisciplinary updated ‘breast care protocol’ based on evidence available, to be used by all team members involved, will enhance the expertise of the staff members but may also be a useful guideline for trainees and residents. Moreover, it will be the best guarantee for good clinical practice. The use of data bases including all patients diagnosed with breast cancer, their treatments and follow-up data, should become a tool in improving ones own practice and ultimately also the outcome for patients.
40.Panel — MULTIDISCIPLINARY APPROACH OF CANCER PATIENTS.
D. Schrijvers.
Dept. Medical Oncology, ZNA Middelheim, Antwerpen, Belgium.

Oncology has undergone an enormous evolution in recent years. Thanks to basic and clinical research, diagnosis and treatment of cancer are contributing to the improved results in survival but also in quality of life of cancer patients. Today most patients are treated with a multi-modality evidence-based approach and when the optimal treatment strategy is not implemented, this results in a poorer survival and quality of life.

The impact of chemotherapy and radiotherapy on survival is well established in patients with breast, gastrointestinal and genitourinary cancers. The combination chemoradiation in certain tumour types such as anal cell cancer or head and neck cancer resulted in similar survival outcome as surgery but with less mutilation and these treatment options are preferred in these patients with locally advanced disease.

On the other hand, surgery is indicated in patients with metastatic disease and metastasectomy has become standard practice in patients with a limited number of metastases with curative intent or for palliation. Therefore, all cancer patients should be treated according to multidisciplinary consensus guidelines and discussed in a multidisciplinary team, preferentially before treatment has started to ascertain optimal patient care.

In my institution, all patients are treated according to multidisciplinary guidelines, available to all physicians on the intranet. These guidelines are regularly updated. In addition, there are regular multidisciplinary oncological conferences where all patients are discussed and registered. For these meetings, the general practitioner is invited to participate. In addition, multidisciplinary consultations, in which different disciplines are present simultaneously, are available.

Good communication and understanding among different health care professionals are necessary to make a multi-disciplinary approach for each patient possible.

40.Panel — PROGRESS IN DAILY MULTIDISCIPLINARY TREATMENT OF CANCER PATIENTS: THE PATHOLOGIST’S VIEW.
C. Sempoux.
Dept. Pathological Anatomy, Cliniques Universitaires St-Luc, Louvain-en-Woluwe, Belgium.

The role of the pathologist is to establish a precise diagnosis based on macroscopic and microscopic elements, if necessary with the help of complementary techniques such as immunohistochemistry principally. Obviously, pathologists will only make appropriate diagnoses if given the whole clinical context. Within the realm of oncology, which constitutes a major part of his work, he has to assess the stage of the tumour as it will condition the patient’s prognosis as well as the need for additional treatment following surgery. The pathologist has also an increasingly important role to play in the assessment of access to new anti-cancer therapies, thanks for example to the detection of receptors on which these new molecules can act, using immunohistochemistry, in situ hybridisation or molecular techniques. In the years to come, he will then progressively be asked to provide the individual cartography of each tumour with a checklist of macroscopic, microscopic and molecular parameters. In this context, it is very important for the pathologist, who for years has worked behind the scenes, to be an integral part of the multidisciplinary organisation of care for cancer patients.

For all participants, the first important positive aspect of multidisciplinary meetings will be to understand each other and to learn to use the same language, with the necessary help of imaging. Thereafter, the group will build guidelines for patient management, including a consensus for the analysis of surgical specimens and the writing-up of pathology reports, based on the group’s routine practice confronted to the current state of knowledge. The essential parameters to be both looked for and mentioned in the pathology report of surgical specimens can be formatted onto standardised computerized report forms that are precise, complete, easy to use and reproducible. This facilitates interdisciplinary communication, harmonious patient management and building of epidemiological data bases. The main focus of these forms is the TNM classification. The aim of the post-operative discussions is to give all disciplines the same precise picture of what they are dealing with, ensuring thereby further specific and appropriate therapeutic management for each patient. Discussions concerning preoperative cases are also much appreciated by pathologists, especially if frozen
sections or additional techniques requiring a specific work-up might be required. Multidisciplinary meetings are also the place to explain and to show the limitations of some samples, the difficulties in the interpretation of some pathologies, such as dysplasia for example, and the cost of some techniques before taking decisions. In these meetings, the pathologist has the opportunity to learn of new surgical technical developments, to discover new pharmaceutical agents and to adapt his practice to the new requirements of other disciplines. With time, the multidisciplinary approach should lead to an improvement in both scientific and teaching activities, with specialized clinical research programs for example. However, the group will only function well if the role of each participant is recognised by the others. Collaboration is indeed a way of thinking that does not automatically stand to reason. It is therefore very important to identify someone in the group who will be responsible for coordinating the discussions and for the harmonisation of the respective participation of each discipline. The pathologist involved in a multidisciplinary approach of patients goes back to the clinic and, although it takes time, this provides him with an unparalleled satisfaction regarding the indispensable value of his work.

40. Panel — PROGRESS IN DAILY MULTIDISCIPLINARY TREATMENT OF CANCER PATIENTS : A VIEW FROM DIFFERENT PERSPECTIVES.
S. Van Belle.
Dept. Medical Oncology Universitair Ziekenhuis, Gent, Belgium.

Three laws have been published in 2002-2003 to organize the practice of oncology in Belgium: the first was the decree on the Multidisciplinary Oncological Consultation, the second the description of the Oncology Programs, and the third was the decree on the recognition of the competence in oncology for medical specialists. Before and after the introduction of these decrees many hospitals have been reorganizing their structures in order to comply with these rules. Nevertheless the current practice is not yet ideal due to several factors:

- the decree of recognition is not yet applied, which obstructs any control on the application or the quality of the oncology programs and also hampers the patient to differentiate between a skilled oncologist and a less skilled one;
- the discussion of a problem at the MOC and subsequent multidisciplinary approach of a cancer patient is still voluntary;
- the psychosocial approach of a cancer patient, as it is described in the decree, is not financed and thus not generally applied;
- there are no guidelines or quality control rules for the non-surgical day-clinic and especially for the oncological day clinic.

Several of these and other problems will be presented in order to stimulate the paneldiscussion.
41. — BREAST CLINIC : A 20 YEARS' EXPERIENCE.
J. M. Nogaret.
Institut Jules Bordet, Bruxelles, Belgium.

Since the foundation of the Jules Bordet Institute in 1939, and in all cancer centres alike, all patients are treated by a multidisciplinary team.
Breast cancer is particular, because it is the most frequent cancer in women.
The incidence increases each year and often, various treatments remain necessary.
The time when the “Halsted operation” was the sole treatment is over since a long time and the surgeon is no longer a “poor lonesome cowboy”.
The surgeon is nearly always the first one to see the patient at the beginning of a breast cancer and remains, for each patient, the “reference” during treatment and follow-up.
Therefore, he has an essential role in composing the multidisciplinary team.
In the twenties, radiotherapy appeared as adjuvant treatment to radical surgery and became indispensable, in the seventies, with the development of breast conservative surgery. In the future, peroperative radiotherapy also seems to be an interesting option.
Since the sixties, adjuvant chemotherapy, and later on hormonotherapy, have proven their efficiency to decrease the risk of distant metastases.
Presently, neoadjuvant therapies often allow to save the breast when the patients have large tumours and to assess “in vivo” the treatments.
Screening allows to diagnose lesions at an early stage so that the radiologists have an important role to play in helping surgeons find the tumour, when infraclinic, and also to obtain a preoperative diagnosis.
To have good margins during the operation, the pathologist assists the surgeon. With the definitive results of the analyzed tumour, he helps the multidisciplinary team in making the good decision for adjuvant therapy.
When a mastectomy still remains necessary, a plastic surgeon is required for immediate or late reconstruction.
The surgeon must also take into consideration the support services : physiotherapy, psychological support, quality of the nursing, information to patients, protocols, management of risk …
High quality specialist breast service for all women in Europe must remain the centre of all cancer specialists and especially for the surgeon who remains “the pillar” of the team.

42. — THE MULTIDISCIPLINARY APPROACH OF THE SENTINEL NODE PROCEDURE.
O. Van Kerschaver, L. Vereecken.
AZ Sint Lucas, Gent, Belgium.

Although sentinel nodes procedure seems a rather “simple” technical procedure, its success relies on an important multidisciplinary effort. Without the necessary quality input of every subdiscipline, a reliable sentinel node procedure is not possible.
We review the impact of every member of the team implicated and discuss their specific role.
43. — THE ROLE OF THE SURGEON IN DIAGNOSIS AND TREATMENT OF LOCALLY ADVANCED BREAST CANCER.
M. R. Christiaens.
Universitair Ziekenhuis Gasthuisberg, Leuven, Belgium.

Until the 1980’s, locally advanced breast cancer was confined to stage IIIB and C (T4 and/or N2 or more) which was an inoperable disease. The use of up-front systemic treatment has not only substantially improved survival but also local response resulting in a renewed interest in local treatment. Moreover, the success of up-front systemic treatment has resulted in a shift of indications to large operable disease, or tumours which do not allow breast conservation at time of diagnosis. The use of up-front systemic treatment in large operable and inoperable breast cancer is the situation by preference in which multidisciplinary consult is obligatory.

Ideally, each patient is seen by at least a surgeon, a radiation oncologist and a medical oncologist at first diagnosis to allow correct clinical diagnosis, the necessary investigations to decide on the extent of the disease and the way treatment response will be monitored. After up-front systemic treatment response evaluation and further treatment decisions should never be made in the absence of the surgeon. It is the surgeon’s role to decide on operability, the extent of residual disease, local treatment options bearing in mind the patient’s wishes and providing psycho-social support.

45. — ROBOT-ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY: RESULTS OF A RETROSPECTIVE STUDY OF 184 CONSECUTIVE PATIENTS.
V. Van Vlodrop, P. Van Migem, G. Denaeyer, P. Schatteman, P. Carpentier, E. Fonteyne, A. Mottrie.
O.L.V. Ziekenhuis, Aalst, Belgium.

Objective. Open radical prostatectomy remains the golden standard in the treatment of organ confined prostate cancer. Though physically well tolerated, its specific complications of (mostly early) incontinence and erectile dysfunction remain a problem. That’s why in urology, there is a search for more minimal invasive treatments with the same excellent oncological outcomes, but with less morbidity as to blood loss, catheter stay, postoperative pain, incontinence and erectile dysfunction. We want to evaluate the role of robot-assisted laparoscopic radical prostatectomy (RLRP) based on personal experience.

Material and methods. From February 2003 to December 2005, 184 patients underwent robot-assisted laparoscopic radical prostatectomy (RLRP) for organ confined prostate cancer. The mean age was 62 years (44-74). All patients had a clinical organ confined disease. Mean preoperative PSA was 8,7 (2,1-23). Prostatic weight had a mean of 49 ml. (13-150). Mean follow-up was 6,8 months.

Results. Operation time had a mean of 171 min. (65-300), blood loss 200 ml. (50-2500). No major perioperative complications were encountered. Minor complication rate was 11,6%. As to the oncological results, we found positive surgical margins in 29 pts. (15,7%). 11 of them had detectable postoperative PSA.

As to functional outcomes, a total of 175 patients (95%) were continent at the 6th month postoperative. Time to complete continence had a mean of 2,1 months.

In the patients in whom bilateral nerve sparing was performed, recovery of erectile function was obtained after 6 months in 84% for patients < 60 years. In patients > 60 years, the maintenance of erectile function dropped to 55%.

Conclusion. Oncological and functional results are very promising. Longer follow-up and prospective studies are needed to confirm these data.
48. — ROBOTIC THORACOSCOPY AND MINIMALLY INVASIVE CARDIAC SURGERY: IS IT REALLY USEFUL?
A. Nguyen, J. L. Jansens, D. De Cannière.
Hôpital Universitaire Erasme, Bruxelles, Belgium.

With the use of more competitive stents in terms of patency rates, Percutaneous Coronary Intervention (PCI) has become a growing competitor in coronary revascularization therapies, continuously narrowing the surgical indications. Because of this evolution, the number of Coronary Artery Bypass Graftings (CABG) is decreasing every year worldwide. In response to this evolving percutaneous approach, aiming for better patency rates, Minimally Invasive Cardiac Surgery (MICS) might become the best cost/benefit ratio to offer, by combining the best results and the less aggressive incisions. The recent onset of robotics in the surgical field might fit with this new concept. By its ease of manipulation, its intra-thoracic 3-dimensional vision, its very small skin incisions (without damaging the sternum), thus its faster recovery, Beating Heart Totally Endoscopic Coronary Artery Bypass (BHTECAB), as a lone standing therapy for single vessel diseases or in combination with PCI, has become a valid option for coronary revascularization. But Robotics can also be applied to other cardiosurgical pathologies, such as mitral valve repair, pulmonary veins isolation for atrial fibrillation, cardiac resynchronization therapy for heart failure, … For these reasons, robotics has become an important part of our routine surgical practice in our institution. The aim of this report is to present this new concept of robotic cardiac surgery, as a response to the recent developments of interventional cardiology.

50. — PLACE OF RFA IN THE TREATMENT OF LIVER LESIONS.
T. J. M Ruers.
Dept. Surgery, Radboud University Medical Centre, Nijmegen, The Netherlands.

Introduction. Nowadays, the application of RFA in colorectal liver metastases is still limited to unresectable disease. However, despite many reports on the use of RFA in this patient category it remains difficult to define the results of RFA in colorectal liver metastases. First of all, radiofrequency ablation is aiming for local tumour control, while the main issue in colorectal liver metastases is to control systemic disease and prolong overall survival. Both issues are often not necessarily identical or even overlapping. Moreover, results published so far are often confusing by reporting overall treatment results of a wide variety of different tumour types ranging from highly malignant lesions such as colorectal liver metastases and melanoma to borderline malignancies such as endocrine tumours or even benign lesions. Also additional treatments by chemotherapy often obscure the primary effect of RFA treatment.

Local tumour recurrence after radiofrequency for CRC liver metastases. Initially two series were reported on the use of radiofrequency during laparotomy. Wood reported on 84 patients with 231 lesions of which 70 lesions were of colorectal origin. Seventy one percent of the cases were treated by laparotomy. Overall a local recurrence rate of 6.5% on lesion basis and 18% on patient basis were reported. Curley reported in a comparable group of 123 patients, of which 41 patients with colorectal metastases, a local recurrence rate on lesion basis of 2% and 2.5% on patient basis. Median diameter of the lesion in both studies was 2 cm and 3.4 cm respectively. In a more recent study by Pawlik, RFA was used in addition to resection. This series comprised 350 lesions (72% colorectal liver metastases) with a median diameter of 2 cm. Local recurrence rate was 8% on patient basis and 2.3% on lesion basis. In all series, local recurrence usually presented within the first year after radiofrequency ablation. Later studies also included patients treated by laparoscopic approach. These studies observed a local recurrence rate on lesion basis between 3% and 12%, while local recurrence on patient basis varied between 7% and 26%. Median diameter of the lesions treated in these studies varied from 2 to 3 cm. For the percutaneous approach results vary significantly. De Baere treated 86 patients with 121 lesions of which 76 patients had colorectal liver metastases. Median diameter of the lesion was 1.9 cm. Local recurrence on lesion basis in this series was 9% and 16% on patient basis.
Solbiati, however, showed significant higher local recurrence rates in 117 patients with 179 colorectal liver metastases. In this series with a median diameter of the lesion of 2.6 cm local recurrence rate on lesion basis was as high as 39%. For lesion over 4 cm in diameter local recurrence was even 68%. This finding was in agreement with Wood and Bilchick who reported on local recurrence rates for tumours larger than 3 cm of respectively 33% and 38%. In a review study on local recurrence after RFA for colorectal liver metastases Mulier et. al. reported an overall local recurrence rate of 14.7% on lesion basis. Results were dependent on size of the lesions as well as the approach used for radiofrequency.

**Conclusion.** Literature shows that for lesions up to 3 cm, radiofrequency is effective and can result in definite local tumour control in more than 90% of the lesions treated. For lesions larger than 3 cm local recurrence rates at the site treated are still high and are reported over 30%. For these larger lesions multiple probes insertion are necessary to obtain a treatment zone large enough to include all tumour tissue. It seems that the efficacy of these overlapping treatment zones is still unreliable resulting in high local recurrence rates. Moreover, the different series give a slight indication that laparoscopic RFA and RFA performed during open surgery is more reliable than percutaneous RFA. During these approaches the surgeon has the opportunity to reduce the heat sink effect by the large vessels by clamping the portal ligament. Furthermore superficial lesions as well as lesions in the dome of the liver are more easily accessible by the open approach compared to the percutaneous approach.

**Effect of radiofrequency on disease free survival.** The efficacy of local tumour ablation in terms of effect on survival is still hard to assess because most reports include different patient selection criteria, different treatment protocols and sometimes even different types of tumour (table II). Moreover, the extent of metastatic disease treated in the different series varies considerable which directly influences data on disease free and overall survival.

Most series, however, show a disease free survival of 1 year or less. Depending on the indications and the extent of liver disease at the time of radiofrequency ablation, disease free survival varies between 7 and 12 months. For more than 90% of the cases recurrent disease occurs outside the treated area, either within the liver or at extrahepatic sites. For this reason many centres favour the use of chemotherapy after RFA treatment. Since in patients with unresectable colorectal liver metastases the effect of RFA on disease free survival is limited the ultimate effect of RFA on overall survival may at least be questionable. In this regard no data from randomised clinical trials are available and data on overall survival are limited to phase II studies.

**Effect of radiofrequency ablation on overall survival (phase II studies).** One year overall survival after radiofrequency of unresectable colorectal liver metastases varies generally between 80% and 93%, 2 year overall survival is reported between 50 and 75%. In the patient populations selected in the different studies the number and diameter of lesions is generally low. In most studies the mean number of metastases is less than 2, while most lesions treated are smaller than 3 cm. Between the studies there are significant differences between these figures, which indeed may reflect differences in resectability criteria. The way radiofrequency was applied also varies considerably between the different studies. Most series include an open approach as well as the percutaneous or laparoscopic approach. Although the way in which radiofrequency was applied clearly affected the local recurrence rate it does not seem to affect overall survival. This finding can easily be explained by the fact that recurrent disease generally occurs outside the treated area.

In a retrospective study by Abdella overall survival after RFA for unresectable disease was directly compared to a more or less comparable group of patients treated by chemotherapy only as well as to a group of patients with comparable tumour characteristics treated by resection (14). Four year overall survival of patients treated by resection, resection plus RFA and RFA only was 65%, 36% and 22% respectively. For patients treated by chemotherapy only, four-year survival was 10%. Although a survival advantage for RFA over chemotherapy was found, the survival curves are clearly converging towards 5 years. The authors concluded that RFA alone or in combination with resection for unresectable disease does not provide survival data comparable to resection, and provides survival only slightly superior to nonsurgical treatment. Whether this modest effect on survival will also sustain after a randomised patients selection and with the use of newer chemotherapy regimens with improving outcomes is very doubtful.

Altogether several studies on RFA for unresectable colorectal liver metastases have shown median overall survival times of more than 30 months. These results have been claimed to be superior to standard treatment of chemotherapy, which nowadays can result in a median survival of 24 months. The superior results of local ablative therapy compared with chemotherapy may certainly be due to patient selection. Especially since patients selected for aggressive local treatment show only a limited number of liver metastases (most studies median number approximately 4 or less), while patients as reported in chemotherapy series may show more widespread liver involvement or even extrahepatic disease.

**Effect of radiofrequency on overall survival (randomised study).** In order to determine the place of local ablative therapy, controlled clinical trials are highly needed.

**One trial would concern patients with unresectable colorectal liver metastases in which aggressive local treatment of the metastases with radiofrequency plus chemotherapy is compared to the standard treatment of chemotherapy alone.** Such a trial (CLOCC) is at the moment running as a multicenter intergroup trial by the
European Organisation for Research and Treatment of Cancer, the Arbeidsgemeinschaft für Leber Metastasen in Germany, and the NCRI colorectal cancer group in the UK, (information bme@eortc.be). Another study would concern the place of radiofrequency in the treatment of resectable colorectal liver metastases. Until the result of these studies is available, local tumour ablation for colorectal liver metastases should be considered experimental and should mainly be performed within well-controlled clinical trials.

51. — ‘TECHNICAL ASPECTS OF RFA FOR LIVER LESIONS’
S. Mulier.
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Radiofrequency ablation of unresectable liver tumours has a complication rate of 8.9% and a mortality rate of 0.5%. Local recurrence rate after a minimal follow-up of 6 months by a percutaneous and a surgical approach is 16% and 3.6% for tumours < 3 cm; 25.9% and 21.7% for tumors 3-5 cm; and 60% and 50% for tumours > 5 cm, respectively. Tips and tricks are being presented to prevent complications and to avoid local recurrence.
52. — COMPLICATIONS AFTER RADIOFREQUENCY DESTRUCTION FOR LIVER TUMORS: A MULTICENTRIC BELGIAN SURVEY.
V. Donckier1, V. Lucidi1, C. Hubert1, J.F. Gigot2, T. Chapelle3, D. Ysebaert1, C. Bertrand4, B. Mansvelt1, H. Verhelst5, P. Willemsen4, B. Majerus2, P. Mendes da Costa2, M. Janssens1, S. Landen10, P. Hauters11, J.P. Saey12, F. Berrevoet13, E. Guerin14 for the Hepatobiliary and Pancreatic Section of the Royal Belgian Society of Surgery.
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Background. Radiofrequency (RF), considered now as the method of choice for local destruction of liver tumors, is claimed as a low-risk procedure.

Objective. To analyze RF-related morbidity and mortality in a Belgian multicentric experience and identify potential predictive factors.

Patients and Methods. A retrospective multicentric Belgian survey was performed, using an anonymous central data base. Patients data were expressed according to the total number of patients. Indications, operative morbidity and mortality (in-hospital or within 2 months after surgery) were expressed according to the total number of RF sessions. Univariate analyses were performed to identify significant predictive factors, using χ² test.

Results. Results from 14 centers, corresponding to 313 patients who underwent 344 RF procedures were collected. Mean age was 65 ± 11 (18-89), sex ratio: 190M/123F. Indications were: hepatocellular carcinoma (HCC) on cirrhosis in 140 cases (40.7%) and metastases (m+) in 200 cases (58.1%), including 153 cases of colorectal m+. 60 RF (17.4%) were performed percutaneously, 16 (4.6%) laparoscopically and 268 (77.9%) by laparotomy. 23 patients (7.3%) underwent repeated RF procedures (2 procedures in 16 patients, 3 in 4 and > 3 in 2). Concomitant hepatic resections for other liver lesions were performed in 119 cases (34.5%). A total of 592 tumors was treated with RF, representing 1 tumor/patient in 65.7% of the cases, 2 in 21% and ≥ 3 in 13.4%. Mean tumor diameter was 17.7 mm. Overall mortality was 2.6% (7 cases after laparotomy RF, 1 after laparoscopy and 1 after percutaneous RF) and overall morbidity was 21.8% (25% after laparotomy RF, 12.5% after laparoscopy and 8.3% after percutaneous RF). Cirrhosis represents a major prognostic factor: mortality in cirrhotic patients 5% vs 1.3% in non cirrhotics (p = 0.038) and morbidity in cirrhotics 33.8% vs 15.4% in non cirrhotics (p < 0.0001).

Conclusion. RF destruction for liver tumors is associated with significant morbidity and mortality, particularly in cirrhotic patients. As compared with literature, the interpretation of the results obtained in the present study should take in account the high percentages of associated liver resection and open approaches.

53. — RADIOFREQUENCY DESTRUCTION FOR COLORECTAL LIVER METASTASES: A MULTICENTRIC BELGIAN SURVEY.
T. Chapelle1, V. Lucidi2, C. Hubert1, J.F. Gigot3, G. Roeyen1, D. Ysebaert1, C. Bertrand1, B. Mansvelt, H. Verhelst5, P. Willemsen4, B. Majerus2, P. Mendes da Costa2, M. Janssens1, S. Landen10, P. Hauters11, J.P. Saey12, F. Berrevoet13, E. Guerin14, V. Donckier1, for the Hepatobiliary and Pancreatic Section of the Royal Belgian Society of Surgery.
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Background. Radiofrequency is currently used in the treatment of liver metastasis, mostly from colorectal origin. Because RF is generally accepted as a low-risk procedure, it is sometimes proposed as an alternative for liver resection; it is also used in combination with liver resection where it allows radical treatment of otherwise non-resectable liver metastasis. Heterogenous indications and various surgical approaches makes interpretation of the value of RF in the treatment of liver metastasis very difficult.

Objective. To analyze the indications and results of RF destruction for treatment of liver metastasis from colorectal origin in a Belgian multicentric experience.

Patients and Methods. A retrospective multicentric Belgian survey was performed, using an anonymous central data base. Patients data were expressed according to the total number of patients. Operative morbidity and mortality (in-hospital
Results: Results from 14 centers corresponding to 153 RF sessions for colorectal metastasis in 143 patients were collected. Mean age in the colorectal group was $63 \pm 11$ (30-89). Mean number of colorectal metastasis treated by RF session was $1.9 \pm 1.4$ (1-7). 132 patients were treated by open approach, 14 percutaneously and 7 by laparoscopic RF. RF was used as the only procedure in 76 sessions and 77 RF sessions were combined with liver resection(s). Overall morbidity was 17% (13.2% in the RF only group and 20.8% in the RF combined with liver resection). Overall mortality was 1.3% (2 patients due to cardiac death, one in each group).

Conclusion. RF destruction for colorectal liver metastasis is associated with a non-negligible morbidity. Further analyses will be performed in this multicentric study to determine the prognostic factors for morbidity/mortality and for local recurrence and long term survival.

54. — RADIOFREQUENCY DESTRUCTION FOR HEPATOCELLULAR CARCINOMA IN CIRRHOTIC PATIENTS: A MULTICENTRIC BELGIAN SURVEY.

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Background. Radiofrequency recently emerged as an efficient local destructive method for the treatment of hepatocellular carcinoma (HCC) in cirrhotic patients. As presumed as a low-risk procedure, RF is now frequently proposed as an alternative to surgical resection in these patients.

Objective. To analyze the indications and results of RF destruction for treatment of HCC in cirrhotic patients in a Belgian multicentric experience.

Patients and Methods. A retrospective multicentric Belgian survey was performed, using a anonymous central data base. Patients data were expressed according to the total number of patients. Operative morbidity and mortality (in-hospital or within 2 months after surgery) were expressed according to the total number of RF sessions.

Results. Results from 14 centers corresponding to 140 RF sessions in 118 patients were collected. Mean age was $68 \pm 9$ (31-82). 86 patients (73%) were Child A, and 32 Child B or C (27%). Mean number of HCC treated by RF session was $1.2 \pm 0.5$ (1-4) and mean tumor size $27.2 \pm 12$ mm (10-85 mm). 102 patients were treated by open approach, 33 percutaneously and 5 by laparoscopic RF. Overall mortality was 4.2% (5 patients after laparotomy and 1 patient after laparoscopic RF). Overall morbidity was 33.8%, (36% after laparotomy, 40% after laparoscopy and 6% after percutaneous RF, $p = 0.003$).

Conclusion. RF destruction for HCC in cirrhotic patients is associated with a significant morbidity, particularly when performed through open or laparoscopic approaches. Further analyses will be presented in this multicentric study to determine the prognostic factors for morbidity/mortality and the results for local recurrence and long term survival.
55 — PROGNOSIS OF CAROTID ENDARTERECTOMY, COMPARISON BETWEEN PATIENTS WITH AND WITHOUT CAROTID CONTRA-LATERAL OCCLUSION.
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Objective. Patients presenting significant carotid stenosis with a contra-lateral occlusion are considered at risk of neurological complications during surgery. This affirmation is controversial. We evaluated the risk of neurological damage at one month post surgery in two groups, one with and another without contra-lateral carotid occlusion.

Methods. All carotid interventions in our centre between 1st November 1989 and 31st December 1995 were reviewed. Exclusion criteria were: significant bilateral stenosis, combined coronary-carotid and non-classical carotid surgery. Two groups were constituted, one control (patients with a single significant carotid stenosis) and another occluded (patients with significant carotid stenosis and a contra-lateral occlusion). All patients were operated by longitudinal arteriotomy under general anaesthesia with electroencephalogram monitoring. We evaluated different parameters: risk factors, on rate of shunting and neurological events at 4 weeks after surgery.

Results. The control group (120 patients) and the occluded group (19 patients) were homogenous with regards to the different parameters. The rate follow up at one month was 94%. The rate of shunting (5.0 against 10.5% p = 0.6665) was not statistically different. The neurological mortality at 1 month (0.8% in the control group and 0% in the occluded group), and the rate of neurological events at 1 month (3.3% against 10.5% p = 0.4088) were not statistically different.

Conclusions. The risk of neurological events during surgery in patients with a contra-lateral carotid occlusion is not statistically higher than in single carotid stenosis.

56. — PRELIMINARY RESULTS OF CAROTID ARTERY STENTING IN A NON-ACADEMIC HOSPITAL.
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Introduction. A review of our experience with CAS in a non-academic hospital is presented.

Materials and methods: A consecutive series of 18 CAS-interventions between 2003 and 2005 is studied retrospectively. Indication, medical history, preoperative carotid imaging, operative technique and results were studied for each patient.

Results. CAS was used 12 times in men and 6 (33.3%) times in women between 2003 and 2005. 5 (27.8%) symptomatic stenoses, 12 (66.6%) asymptomatic stenoses and 1 (5.6%) arterio-venous fistula were treated. One permanent post-operative ipsilateral ischaemic neurological deficit occurred (5.6%). The mean duration of hospital stay was 4.9 days (range, 2-9 days).

Conclusions. Our study shows that CAS is feasible in non-academic hospital settings, with acceptable early results. Participating in larger studies should confirm our results. Today, our Belgian government tends to use criteria that seem too restrictive to allow participation of certain (non-)academic hospitals in evaluation studies, which is regrettable for centres with interesting results.
58. — LONG-TERM OUTCOME OF A BALLOON-EXPANDABLE STENT GRAFT IN THE TREATMENT OF Iliac IN-STENT RESTENOSIS.
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Purpose. In-stent restenosis after endovascular treatment of iliac occlusive disease occurs in 10 to 30% of patients. This study evaluated the efficacy and long-term patency of a balloon-expandable stent graft in the specific treatment of iliac in-stent restenosis.

Methods. Retrospective analysis was done of patients who received an Abbott Peripheral Stent Graft (Abbott Vascular Devices, Redwood City, CA, USA) between October 1998 and December 2004. Assessment of stent graft patency was determined according to Society for Vascular Surgery and American Association for Vascular Surgery (SVS/AAVS) criteria. Stenosis of the stent graft greater than 70% on angiography was considered evidence of recurrent disease.

Results. Seventy-nine limbs in sixty patients were treated for iliac in-stent restenosis. The stent graft was placed in the common iliac artery, unilateral (n = 35) and bilateral (n = 19), and the external iliac artery (n = 6). Mean age was 56 ± 9 years. Technical success rate was 100%. Mean follow-up was 31 ± 17 months (range, 2-72 months). A reintervention consisting of an additional endovascular intervention or surgical inflow procedure was required for 8 limbs (10%) in 6 patients to maintain iliac patency. Primary patency rates at 1 year and 5 years were 97.3 ± 1.9% and 76.5 ± 8.9%, respectively. Secondary patency rates at 1 and 5 years were 100 ± 0.0% and 98.4 ± 1.6%, respectively.

Conclusions. Endovascular treatment of iliac in-stent restenosis with a balloon-expandable stent graft, is a procedure with excellent initial and long-term results. Based on the present data, the use of a stent graft can be proposed as a standard therapy for iliac in-stent restenosis.

59. — LEFT ATRIAL MYXOMA : PRESENTATION WITH ACUTE AORTIC OCCLUSION AND ‘RESOLUTION’ OF THE PRIMARY TUMOR.
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Introduction. Myxoma is the most frequent cardiac tumor which presents with systemic emboli, cardiac obstructive symptoms or constitutional symptoms. Surgical resection is needed to avoid further embolization, cardiac failure or recurrence of the tumor.

The aim of this presentation is to describe this tumor as an differential diagnosis in a case of complete infrarenal aortic occlusion and the possibility of further resolution of the primary tumor.

Case report. A 50-year old man presented at the emergency department because of severe low back pain. This pain started one hour before with tenesmus, followed by pain in the lumbar region which gradually extended to the two legs. At arrival, we saw an agitated but hemodynamically stable patient. Clinical examination showed paresis of both legs, which showed livedo reticularis, no femoral arterial pulsations and no capillary refill. Chest auscultation was normal. A contrast-enhanced abdominal CT-scan showed a complete occlusion of the infrarenal abdominal aorta, starting 5 cm beneath the ostia of the renal arteries. Both kidneys, spleen and liver showed multifocal low attenuation areas, compatible with multiple emboli. Under general anesthesia, an emergency embolectomy with Fogarty catheters through a femoral incision was performed with evacuation of a transparent, gelatinous embolus. Because of this myxoid aspect, a peroperative transesophageal echography was performed. This showed a pedunculated nodular structure of 3 mm at the left side of the interatrial septum. Histopathological examination showed an embolus of a cardiac myxoma.

Patient was referred to the department of Cardiac Surgery. He refused to stay in the hospital for further examinations and treatment. Two months later, he agreed with an operation but the residual tumor could not be identified anymore. The postoperative course was uneventful.

Discussion. This report describes two exceptional characteristics of atrial myxoma. The tumor caused in our patient an acute infrarenal aortic occlusion, which is a rare presentation. Secondly, there was the unconventional situation of delay between diagnosis and resection of his residual myxoma because of patient’s initial refusal for an operation. At time of operation, two months later, the residual tumor could not be identified anymore, so an asymptomatic further complete embolization or regression had occurred. To the best of our knowledge, this is the first report describing this.
60. — SURPRISING ETIOLOGY OF RENOVASCULAR HYPERTENSION : A CASE REPORT.
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Takayasu arteritis is a chronic, idiopathic, inflammatory disease that primarily affects large vessels, such as the aorta and its main branches. Epidemiologically, it is mostly found in young female, especially in Asian and Latin American countries. It’s presentation is heterogeneous according to the location and severity of the aortic branch lesions. The diagnosis is difficult, and treatment options include corticosteroids, percutaneous transluminal angioplasty, or surgical bypass. We report here an interesting case of Takayasu arteritis in a young woman presenting a long-term history of hypertension. This case will be discuss with preoperative imagery and peroperative video, followed by review of the current literature.

A 27-years-old asian woman was admitted with chronic hypertension but also complained of dizziness and weakness of the left arm. Sedimentation rate was normal and MRI showed a type II Takayasu arteritis with an occlusion of the left subclavian artery with steal syndrome, a long subocclusion of the left common carotid artery and an atypical coarctation of the distal descending aorta. Aorta-aortic bypass graft surgery was performed with an additional bypass between the prosthesis and the left internal carotid. Postoperatively, her blood pressure was significantly lowered. Patency of the conduits was established by MRA and the patient was discharged at day 6.

In renovascular hypertension in young subjects, Takayasu arteritis should be kept in mind in the differential diagnosis because of the atypical clinical expression of the disease even if they do not have associated symptoms of multiple arterial involvement.

61. — AXILLARY ARTERY INJURY AFTER A PROXIMAL HUMERAL FRACTURE : CASE REPORT AND OVERVIEW OF THE LITERATURE.
Dept. of Surgery, AZ Damiaan, Oostende, Belgium.

Traumatic lesions of the axillary artery after a humeral neck fracture are very uncommon. Their clinical presentation is often complex and demands a high index of suspicion. This 81-year old woman presented with a complex humeral neck fracture of the left shoulder after a fall. Initially, normal pulsations of the radial artery were seen when the arm was exorotated and the elbow was in 180° extension. When the arm was endorotated and the elbow in 90° flexion, pulsations were absent. The neurological examination was normal. An arteriography showed a kinking of the third part of the axillary artery with the presence of an intimal flap. After open reduction and fixation of the fracture with Kirschner pins, a vascular exploration was performed. This confirmed the presence of an intimal flap. A resection of the damaged part and an end-to-end anastomosis with venous patch was performed. Because of failure of the osteosynthesis, a reversed shoulder prosthesis was placed after 4 weeks. The anastomosis has remained patent and there have been no signs of neurological injury until this day.

A review of the literature showed that most lesions of the axillary artery are treated with conventional open surgery, but increasingly more lesions become feasible for endovascular repair. Limb salvage rates are high, but functional outcome remains poor due to the associated neurological injuries.
62. — ENDOFIBROSIS OF THE EXTERNAL ILIAC ARTERY IN A 51-YEAR OLD ENDURANCE RUNNER.
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Introduction. Apart from the known muscular and neurologic origin, claudicatio-like symptoms during extensive exercise can be caused by flow limitations in the iliac arteries.

Materials and Methods. Case report and review based on a Medline search of the literature.

Results. A 51-year old endurance runner presented with a six month history of pain and powerless feeling in the right leg after a few kilometres running. He was at low risk for developing artherosclerosis, since the only risk factor was a history of smoking.

Echo-doppler, ankle/branchial index after provocative test and Magnetic Resonance Imaging confirmed the diagnosis of endofibrosis of the external iliac artery.

He was treated successfully with endofibrosectomy and saphenous enlargement patch and he returned to competition within 6 months.

Conclusion. Exercise – induced arterial endofibrosis has been found frequently in endurance athletes. Exact etiology remains unknown, but the disease is defined by specific histologic findings.

Ankle/brachial index during exercise test plays a key role in diagnosis. Stenosis can be confirmed with echo-doppler and arteriography.

Surgical endarterectomy is preferable if patients want to continue their sport’s activities. Endovascular procedures do only have a short term effect.

Although long-term results are unknown, most of the surgically treated patients can return to competition.

63. — VARICOSE VEINS IN AMBULATORY SURGERY: PATIENT'S PERCEPTION.
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Introduction. Superficial venous surgery has been mandated to be performed in ambulatory surgery unit. The aim of this study is to analyse the patient’s perception concerning the period before hospital discharge.

Study design. This was a prospective observational study of 100 patients who underwent primary varicose vein surgery. Venous disease was assessed according to the CEAP classification and VCSS system. The perception of anxiety or psychological apprehension was documented by simple questions. Additionally, we recorded the daily postoperative pain, the return to normal activity and the patient’s satisfaction score.

Results. Four patients required unplanned admission from the ambulatory surgery floor to the hospital unit: two for medical reasons (urinary retention and haematomas) and two ladies who stayed overnight because of a severe anxious state. When questioned about the potential anxiety before hospital discharge, the majority of patients (87%) declared no psychological apprehension. Eleven patients admitted to leave the hospital despite potential distress. Patients with distress were more frequently male (p = .75) with superficial phlebitis (p = .49), preoperative painful varicose veins (p = .13) and a higher number of surgical incisions (p = .35). The only significant difference which existed between patients with or without anxiety was regarding the complication rate in the recovery room (p = .04).

Conclusion. Despite careful patient selection, psychological distress could not be prevented or predicted. There is no doubt however that taking these emotional factors in outpatient surgical practice into consideration is essential.
64. — POPLITEAL VENOUS ANEURYSM. REPORT OF A CASE.
Dept. of Surgery, AZ Damiaan, Oostende, Belgium.

A 75-year old female presented with a saccular aneurysm of the right popliteal vein. As in most cases, this was discovered during investigation for chronic venous disease with duplex scanning. Until now, 105 cases of popliteal venous aneurysms have been reported in the literature.

Aneurysms of the popliteal vein often cause thrombosis and subsequently pulmonary embolism. Our patient developed pulmonary embolism in 1993, but the underlying pathology was never further investigated.

As the risk of associated pulmonary embolism is high, elective surgery is recommended, since it has been proven that proper anticoagulation treatment does not prevent the risk of pulmonary embolism.

Most popliteal vein aneurysms are sacciform rather than fusiform. Therefore, tangential aneurysmectomy with lateral venorraphy is the procedure of choice. This was also performed in our patient.

Duplex scanning and phlebography (useful in the patient undergoing surgical repair) give the most accurate diagnosis.

The etiology of venous aneurysms, which are more common in the neck, thoracic and visceral veins, is discussed here. Presentation, differential diagnosis, diagnostic work-up and treatment options are reviewed.

65. - CONTAINED LATE RUPTURE OF STENTED AAA DUE TO SURINFECTION.
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We present a case of a 85-year old man who received a bifurcated Zenith aortic prosthesis for an abdominal aortic aneurysm of 62mm 22 months earlier. Follow-up CT after 18 months showed a good position of the stent without evidence of endoleaks and a slightly reduced aneurysmal sac diameter. 20 months after placement of the stent the patient developed pain localised in the left flank region irradiating to the back and the left groin, associated with fever chills and raised inflammatory parameters. A CT scan of the abdomen showed a peri-aortic semicircular enhancing collection and a concommitant collection at the left psoasregion that appeared to be connected to eachother through a narrow neck.

A percutaneous puncture was performed draining 150cc of brown serous fluid, after which the pain was alleviated and the collection was reduced at control CT. The inflammatory parameters showed a decline as well. Cultures of the punctate remained sterile. The decision was made not to treat the collection surgically because of the relatively poor condition of the patient as we did not expect he would be able to sustain a major surgical drainage and possible resection of the graft with subsequent reconstruction.

Because of clinical deterioration 2 months later a surgical drainage through left lumbotomy and median laparotomy was performed. The aneurysmal sac was found to be ruptured locally in the left anterolateral region and the prosthesis had grown in well proximally and distally. The region was debrided and a omentoplasty was performed. No aorto-enteric fistula nor endoleak was encountered. Cultures of fluid and trombus remained sterile, cultures of the aortic wall showed coagulase-negative stafylococcal bacteria. The patient recovered relatively well from these procedures.

Based on these findings we propose a contained late rupture of the aneurysmal sac most probably as a result of surinfection.
66. — INFECTION OF ARTERIAL ENDOVASCULAR STENTS AFTER PERCUTANEOUS APPROACH.
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Introduction. We describe the surgical treatment of infected arterial stents deployed initially by endovascular mean.

Methods. We describe 3 patients who developed an arterial stent infection after percutaneous procedure.

The first patient was a 53 years old lady who had a vulvar cancer treated by large surgical excision, both femoral adenectomy and pelvic radiotherapy. She developed a spontaneous left groin bleeding treated by a covered stentgraft into the common femoral artery after a failure of a coil embolisation. The second patient was a 62 years old man with a popliteal aneurysm rupture treated by a covered stentgraft. The last patient was a 72 years old man who had a common iliac stenting for an occlusive disease inducing an ischaemic foot.

Results. Infection occurred after respectively 72, 23 and 21 days (mean of 38 days) after the percutaneous treatment. Bacteriological founding was an Escherichia Coli for the first 2 patients and a Staphylococcus Aureus for the third one. The treatment consisted on a radical excision of the infected arterial wall and the stent graft. Arterial reconstruction was performed using a cadaveric homograft in 2 cases and a venous graft in one case. Intra-venous antibiotics was used previous to surgery and post-operatively.

During the follow-up of respectively 25, 4 and 10 months, we had no death. The last patients developed 2 month later a secondary infection of his cross-over femoro-femoral bypass treated by homograft.

Conclusion. Stent infection is a rare condition. The treatment involves both medical and surgical radical approach. However the results seems to be encouraging.

67. — A PATIENT WITH FEVER, NO OBVIOUS FOCUS OF INFECTION AND A HISTORY OF AN AORTOBIFEMORAL PROSTHESIS: WHAT’S NEXT?
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Introduction. We present the case of a patient admitted in 2006 with septic fever for which he was hospitalized at the department of Rheumatology for suspicion of a crisis of rheumatic arthritis. Final diagnosis is a mycotic aneurysm of the descending thoracic aorta for which an open repair is performed.

Case. A male 74-year old patient had a vascular history of an aortobifemoral prosthesis for an infrarenal abdominal aortic aneurysm, a carotid endarterectomy of the right internal carotid artery and a recent PTA with stenting for a high-grade stenosis in both femoral arteries in October 2005.

The PTA was complicated by an urosepsis, a thyroid storm and a septic phlebitis with abcedation at the site of a peripheral venous line. The abcedated cephalic vein was excised and treated with intravenous antibiotics through a central venous line. The gram staining and cultures showed infection with E.Coli sensitive for fluoroquinolones. He was dismissed from the hospital in december 2005.

Now, the patient presents with septic fever as high as 41°C, muscle pain, painful swollen joints, and shortness of breath. No signs of meningitis were present. X-ray of the thorax was normal. The patient was hospitalized at the Department of Rheumatology. Hematology and biochemistry tests showed increased inflammatory parameters. No specific abnormalities were seen at X-rays of the involved joints but microbiology of hemocultures grew E.Coli. Urine tests were negative and an echocardiography did not show cardiac vegetations. Our department was contacted, and a PET/CT-scan was performed regarding the previous history of an aortobifemoral prosthesis. Besides a doubtful limited spot of low-grade infection at PET-scan of the aorto-bi-femoral prosthesis which was not confirmed on CT-scan, a severe mycotic aneurysm of the descending thoracic aorta, a few cm distally of the origin of the subclavian artery, was diagnosed.

Conclusion. Diagnostic studies, differential diagnosis and treatment options are discussed.
68. — A VERY RARE ETIOLOGY OF A MYCOTIC AORTITIS. CASE REPORT AND REVIEW OF LITTERATURE.
N. Poncelet, R. Verhelst.

We report a case of a 75-year-old-woman with a mycotic aortic aneurysm caused by Pseudomonas Aeruginosas. She presented fever and left abdominal and dorsal pain when she arrived in emergency. An inflammatory syndrom without any urinary infection or bacteriemy was present. She presented an infra-renal aortic dissection with a peri-aortic hematome at the CT-scan. A medical treatment’s begun. After 1 week, she presented a rupture of the antero-lateral aortic wall. An aorto-biiliac grafting was performed with a dacron graft. Bacterial wall biopsy shows a big quantity of pseudomonas aeruginosas in the aortic wall and antibiotic treatment was initiated. Hemocultures and urinary was also infected by pseudomonas. She developed a bilateral iliac anastomotic pseudo-anevrism treated in emergency with a covered stent-graft. All the graftings were taken back after two weeks and an aorto-biiliac autologus femoral veins graft was placed.

The mains causes of mycotic aortitis and anevrism are Salmonella and Staphylococcus. Pseudomonas was never described for been an etiology of mycotic aortic disease.

69. — TREATMENT OF AN INFECTED AORTOBIFEMORAL GRAFT: RESECTION AND EXCHANGE WITH A COMBINED ARTERIAL AND VENOUS HOMOGRAFT
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Infection of an aortofemoral graft is one of the most dreaded complications in vascular surgery. According to most sources in literature, infection occurs in 2-5% of all cases and is more frequent in cases where groin incisions are involved. Numerous techniques have been developed for treatment. One of the current treatments is based on complete replacement of the infected graft by graft material less prone to infection such as autologous vein or homologous artery. We like to present you a case of a 57 year old male who underwent an aortobifemoral reconstruction for an infrarenal aortic aneurysm with a maximal diameter of 5.6cm. We opted for a classical reconstruction because the aneurysm was unfit for evar. The procedure was performed without encountering complications. The postoperative period was uneventfull and he was discharged after 10 days.

Two months later, he was readmitted due to fever and a red swollen right groin. CT scan showed infection over the entire body of the graft. Both of the groins were drained, subsequently we planned a complete resection of the graft an replacement by a cryopreserved arterial homograft. We could only order a thoracic aorta and an iliac artery, so in addition we added a venous homograft of our own graft bank, to complete the bifurcation. The reintervention was successful. Four days later he was operated again for a bleeding at the proximal anastomosis. The anastomosis was repaired and the patient returned to the ICU. After two weeks a laceration of the left ureter was detected, due to peroperative traction and ischaemia, and he received a nefrostomy. Eventually, after a long respiratory recovery, he was discharged of our department 3 months after surgery.

According to literature, cryopreserved arterial grafts are frequently used to replace infected aortofemoral grafts. Follow up in large centers have shown a mortality rate between 10 and 20%. The downsides of this technique are degeneration and aneurysm formation, and sometimes recurrent infection and rupture. In our department we often use homologous veins in accessed surgery, or in distal bypass surgery when there is no proper vein material at hand.

The combined use of cryopreserved arterial graft and homologous venous graft has not been published yet. Although the patient’s recovery was troublesome, the combination of arterial and venous material for the reconstruction posed no problems. At discharge the patient was free of infection and had a patent aortobifemoral graft.
70. — OBTURATOR BYPASS FOR INFECTED GROINS: A VALID EXTRA-ANATOMIC ALTERNATIVE?
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Introduction. Prosthetic infection is an uncommon but severe complication in vascular surgery, associated with a high morbidity and mortality rate. While the diagnosis may be difficult, treatment is even a greater challenge. In case of an overt prosthetic infection localised to the groin, creation of an extra-anatomic bypass from aortic/iliac level to Hunter’s canal through the obturator foramen (obturator bypass) can be helpful to avoid an infected groin, and to prevent limb ischemia.

Patients. Two patients recently had an obturator bypass in our department.
A 84-year-old man presented with infection of the left groin, five years after aortobifemoral bypass grafting for AAA. As the infection seemed to be localised to the left groin and because of the poor general condition, an obturator bypass was inserted with removal of the infected left iliac prosthetic limb. Two years later, thrombectomy of this bypass had to be done because of acute ischemia of the left leg. A PTA of the proximal anastomosis was done; as there were arguments for a prostheto-enteric fistula, a covered stent was placed. A few months later, the patient died because of recurrent limb ischemia.
Another patient (male, 72-year-old) had a femorofemoral crossover bypass inserted for acute thrombosis of the right iliac axis. Two years later, he was admitted because of infection in the right groin. An obturator bypass was created, with removal of the old femfem bypass. Six months later, a thrombectomy was done because of acute thrombosis. Since then, the patient is doing well.

Conclusion. Use of an extra-anatomic bypass is a valuable option in the treatment of vascular graft infection, especially in older patients in poor general condition. However, they do not guarantee an uneventful outcome.

72. — FOLLOW-UP OF DIFFERENTIATED THYROID CANCER (DTC).
A. Van den Bruel.

The aim of a follow-up strategy in differentiated thyroid cancer patients is double. The early detection of residual and recurrent disease in a minority of patients is mandatory since it gives the opportunity to rescue and cure a substantial part of these patients. On the other hand the strategy has to include a method to reassure the majority of patients with an excellent prognosis (1).
The foundation of follow-up of DTC is good-quality surgery followed by radioiodine ablation in the majority of patients. Good-quality surgery assumes an expert surgeon and a high volume of procedures. A one stage procedure including total thyroidectomy and lymph node dissection in appropriate cases is gaining field. Lymph node dissection allows staging and correct staging is the mainstay of stratifying patients in different risk categories with different follow-up algorithms.
The discussion will be focused on the most extensive group of patients with a low risk of residual or recurrent disease. In this group of patients the use of recombinant human TSH (rhTSH, Thyrogen®) in the follow-up diagnostic procedures is highlighted (FDA and EMEA approved).
“Management Guidelines for Patients with Thyroid Nodules and Differentiated Thyroid Cancer” have been published recently and can be downloaded from the American Thyroid Association site (www.thyroid.org). These guidelines give in depth information and rate the recommendations based on available evidence. They also address many controversial treatment issues. These include the extent of surgery needed for small thyroid cancers, the role of recombinant human thyrotropin, and the use of radioactive iodine to ablate remnant tissue following thyroidectomy (2).
The “European consensus for the management of patients with differentiated thyroid carcinoma of the follicular epithelium” will be published soon. This consensus is less extensive on the management of invasive or refractory cases and recommendations are not rated based on available evidence. They represent more the “expert opinions” and succeed in providing straightforward strategies. These are illustrated by useful summary tables including a “state of the art” table.
on the indications for postsurgical thyroid ablation based on risk stratification. The indication of rhTSH (Thyrogen®) as an alternative to withdrawal of thyroid hormone before radioiodine ablation (EMEA approved) is integrated in these guidelines (3).

References

73. — IMAGING AND ENDOCRINE WORK-UP OF ADRENAL INCIDENTALOMAS
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Work-up of adrenal incidentaloma is an evolving, step by step procedure. It aims to select patients at risk of suffering from adrenal endocrine disorders and/or malignancies. The type of work-up proposed today, even if rather imperfect, may spare a substantial cohort of patients to be “offered” an adrenalectomy on the sole basis of the quite artificial criteria of tumour size.

Endocrine work-up is the first step of the procedure. Tumour’s secreting pattern is studied in order to exclude Cushing syndrome, Primary Aldosteronism (PAL), sexual Adreno-genital syndrome, Congenital Hyperplasia or Pheochromocytoma. Screening of Cushing syndrome is performed by evaluating the circadian rhythm of ACTH and cortisol, the 24 hours urinary free cortisol and 17-hydroxysteroids excretion, and when necessary by an overnight screening dexamethasone suppression test. PAL is screened by measuring Plasma Aldosterone Concentration (PAC), Plasma Renin Activity (PRA) and by calculating the PAC/PRA ratio. A 250 µg IV ACTH (1-24) stimulation test is performed in order to exclude any form of Congenital Adrenal Hyperplasia or aberrant intra-tumoral steroid metabolic pathway. Serum sexual steroids are measured to exclude Adreno-genital syndrome. Pheochromocytoma is screened by measurement of 24 hours urinary catecholamines excretion.

Radiologic work-up is the second step of the procedure. The goal is to determine if the lesion is benign or malignant. Most often the adrenal tumour is discovered on a CT scan performed for an unrelated disorder. On CT scan, criteria for adenoma are a regular shape, smooth margins, a size < 3cm, a homogeneous density and an attenuation value < 10HU on non-enhanced CT. If the nature of the adrenal tumour on CT scan remains unclear, MRI should be performed. Various MRI parameters can be used : T1 and T2 signal characteristics, enhancement pattern and, most of all, the chemical shift characteristics. The MRI evaluation is of great value to characterise adrenal masses and to differentiate adenomas from metastases. Nuclear medicine imaging examinations are less frequently performed. However, when the diagnosis of pheochromocytoma is suspected, we are used to perform ¹²³I MIBG nuclear scanning. This modality may help to confirm the diagnosis and allows detection of metastatic disease.

In conclusion, evaluation of adrenal incidentalomas aims to precise whether the tumour is hyper-functioning and/or may be malignant. The first step consists in an appropriate endocrine work-up. The second step is radiological and evaluates the risk of malignancy. In patient considered at low risk of malignancy and/or endocrine disturbance, a simple follow-up may be proposed.
74. — THE ROLE OF THE NUCLEAR MEDICINE SPECIALIST IN THE PERIOPERATIVE MANAGEMENT OF HYPERPARATHYROIDISM

Although bilateral neck exploration is traditionally considered as the treatment of choice in patients with primary hyperparathyroidism (PHPT), several surgical techniques of minimally invasive parathyroidectomy (MIP) have been proposed in PHPT patients with a high probability to be affected by a solitary parathyroid adenoma. However, such a more focused unilateral surgical approach for PHPT may underestimate the incidence of multiple-gland disease.

In this single-institution retrospective review of patients with hyperparathyroidism treated with MIP in a 5-year period, 79 patients were referred for first-time parathyroidectomy: 5 for MEN syndrome, 6 for tertiary, 8 for secondary, and 17 for primary HPT requiring also thyroid surgery for (multi-)nodular thyroid disease and so were excluded from MIP. All these patients had a classical bilateral neck exploration without preoperative localisation studies, but assisted by intraoperative PTH monitoring and frozen section investigation. All these patients were successfully operated without failure to cure the disease nor recurrence, but with one recurrent nerve paralysis.

The other 42 patients with true PHPT were investigated for possible MIP. In a first series of 20 PHPT patients, a focused hyperselective MIP was performed in 10 patients when two preoperative imaging studies (high-frequency neck ultrasound, parathyroid scintigraphy with 99mTc-MIBI, CT-scan, MRI or venous sampling) were positive for the same location, while the other 10 patients with failed location studies had a classical bilateral neck exploration. All patients became eucalcemic after surgery, without complications nor recurrence.

In a consequent series of 22 PHPT patients, 12 patients were selected for radio-guided hyperselective MIP based on a suitable preoperative parathyroid scintigraphy with 99mTc-MIBI, without any other investigations. This technique requires a close collaboration between surgeon and nuclear medicine specialist in order to locate intraoperatively the enlarged parathyroid gland. On the morning of the surgery, a new subtraction tomography is performed 2 hours after injection of the tracer. Immediately after acquiring these last nuclear images, surgery can start and is based on the intraoperative detection of the parathyroid adenoma under the guidance of a gamma probe allowing the removal of the parathyroid adenoma through a small 1-2 cm skin incision, combined with frozen section and iPTH monitoring. In our centre, the nuclear medicine specialist is standing by in the operating theatre. In this last series of 22 PHPT patients, 10 patients had no suitable preoperative parathyroid scintigraphy and were classically operated without further investigations. Also in this series all patients became eucalcemic after surgery, without complications nor recurrence so far.

Conclusion. Improvements in pre-operative parathyroid localization studies as well as the use of the iPTH assay have made minimally invasive parathyroidectomy possible, and proven to be safe and effective for solitary parathyroid adenoma. For patients with multiple gland disease or equivocal localization studies, the traditional bilateral approach remains the standard of care. The almost complete success rate using a combination of preoperative parathyroid scintigraphy with 99mTc-MIBI, intraoperative gamma probe localization, and selective frozen pathology seems to be the most cost-effective approach in carefully selected patients, but needs further evaluation in a larger series.

76. — MINIMALLY INVASIVE REPAIR OF PECTUS EXCAVATUM IN CHILDREN: HOW I DO IT.
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This presentation shows ‘How I do’ a Minimally Invasive Repair of Pectus Excavatum (MIRPE) in children. It addresses the surgical technique and highlight tips and tricks.

The pectus excavatum deformity, also known as funnel chest or sunken chest, is the most common chest wall malformation in children.

The Ravitch and the Rehbein technique remained for more than 50 years an unchallenged “golden standard” for treating the chest wall of patients with pectus excavatum deformity.

This situation changed dramatically since the advent of MIRPE described by Nuss in 1998.

The principle is based on the chest’s plasticity in childhood that allows the mobilisation and lifting of deep sunken chests without any rib discontinuity.
The procedure is best performed between 8 and 12 years of age, and consists in remodelling the chest wall deformity by inserting a metal bar retrosternally under thoracoscopic control. The implanted bar is removed after 2 to 3 years. The available results are extremely promising, and seem to lower the patients’ threshold for surgery. Furthermore, an increasing number of older children (and adults) who declined open surgery are now requesting the MIRPE. Yet, no long term results are available for that older group.

77. — HOW TO PERFORM AN ILIOINGUINAL NODE DISSECTION FOR MELANOMA.
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Rationale. The aim of surgery in nodal melanoma involvement is to ensure regional tumour control. Taking into account the anatomy of the lymphatic channels, as a continuum between inguinal and iliac / obturator nodes, and the risk of harbouring microscopic nodal deposits above the inguinal level when the groin is clinically involved (> 30% cases), the technique of ilioinguinal “en bloc” node dissection has been developed.

Technique. Under general anaesthesia, a bladder catheter is inserted, the skin of the lower abdomen, groin and thigh are disinfected and the operation field covered with a sterile U-shape drape. Antibiotic prophylaxis is ensured with first generation cephalosporins.

An S-shape incision is made from the Mc Burney point down to the lower apex of the femoral triangle, removing a skin area above the palpable inguinal node. Thin skin flaps are made, lymph nodes and fat tissue above the inguinal ligament are dissected en bloc, down to the external oblique fascia, including Scarpa’s fascia, but are not severed from the femoral nodes in situ. The external oblique fascia and lower abdominal muscles are incised 2-3cm above the inguinal ligament in order to expose the retroperitoneal space and the iliac vessels. Fat tissue and lymph nodes are resected from lateral (genitofemoral nerve) to medial (peritoneum covering ureter and superior vesical artery) and from cranial (common iliac vessels bifurcation) to distal (including fossa obturatoria), leaving the obturatory nerve undamaged. The specimen is still attached to the inguinal nodes through the lymphatics in the femoral canal. In order to facilitate the dissection, the deep circumflex, deep epigastric and obturatory vessels may be severed ; in case of bulky iliac nodes, transaction of the inguinal ligament can be useful. Haemo- and lymphostasis is performed step by step with clips and ligatures.

In the groin, 2 thin skin flaps are elevated, to the lateral border of the sartorius and to the adductor longus muscle. The fascia of these muscles is incised and removed. The great saphenous vein is severed at the base of the femoral triangle and ligated as well as the lymphatic channels running through the subcutaneous fat tissue. The specimen is then elevated starting laterally and working medially, dissecting it from the femoral vessels. Care is taken to avoid damage to the deeper located branches of the femoral nerve. The great saphenous vein is ligated at its junction with the femoral vein. The inguinal ligament is lifted up and the iliac nodes brought to the inguinal area through the widely open femoral canal. Ex-vivo, the inguinal nodes with their skin coverage are separated from the iliac and Cloquet nodes, and sent to the pathologist as fresh specimens.

The wound is rinsed with sterile saline, the inguinal ligament fixed to the Cooper ligament. The proximal tendinous insertion of the sartorius muscle is severed by electrocautery, with care to avoid damage to the cutaneous femoris lateralis nerve, brought medially to cover the femoral vessels and sewn to the external oblique fascia. The abdominal wall is closed in 2 layers running suture. A suction drainage is inserted in the groin and the wound closed with non-absorbable stitches. The scar is dressed with gauze and with an elastic bandage covering the lower abdomen and upper thigh.

Complications. The most frequent complications include wound seroma, infection or disruption, erysipelas and lymphoedema, mainly of the thigh. This can be prevented by meticulous skin care and elastic stocking.

Results. Following radical ilioinguinal node dissection, pure local recurrence occurs in less than 5% cases, even without radiotherapy. 5-year survival rates reach 40-45% if only the inguinal are invaded and drop to 10-30% if the iliac nodes are invaded as well.

References
The sentinel lymph node(s) (SLN) is the first node or nodes to which lymph drainage and metastasis from breast carcinoma occurs. If the SLN is negative, the other nodes are presumed also to be negative. The objective of the SLN procedure is to perform an accurate axillary staging and provide good local control, while sparing the patients the morbidity of an axillary lymph node dissection (ALND).

A close cooperation between the surgeon, radiologist, nuclear physician and pathologist is needed to guarantee the quality of the procedure.

Since there is no standardized technique for the procedure, the Leuven technique will be described.

**Indications.** Patients with primary surgery for unifocal breast cancer less than 2-3 cm diameter with no clinical (US nor-FNAC lymph nodes negative) involvement of axillary lymph nodes are eligible for the procedure.

**Technetium labelled albumin (Tc99m) and patent blue** are used to identify the SLN since they are complimentary to obtain a high detection ratio.

When the breast lesion is palpable, Tc99m is usually injected the afternoon before surgery. The operation has to be performed within 24 hours after injection because the half-life of Tc99m is 6 hours. In non-palpable lesions Tc99m is injected the morning of the surgery, after the localisation procedure of the primary tumour. A single subdermal injection of 40 MBq of Tc99m in 0.2-0.4 ml of saline is performed (25G needle) in correspondence with the cutaneous projection of the tumour. Attention should be paid to avoid contamination of the surrounding skin.

A lymphoscintigraphy is performed to localise the SLN. Scans of the site of the primary tumour and adjacent nodal basins are made 1-2 hours after injection. The patient’s arm is abducted above the head to increase the distance between the primary tumour injection site and the regional nodal basins and to permit visualization of the axilla in two planes. The skin projection of the SLN is marked with a suitable pen while the patient is supine with the arm extended laterally at 90° to the body.

If there is no visualisation of a SLN 2 hours after injection, another 40MBq of Tc99m is administered, usually without performing additional scans.

**Surgery.** After induction of the anaesthesia 1cc of patent blue is injected intradermal in the retro-areolar region. Breast massage is carried out to dilate the breast lymphatics maximally. In older patients and patients with voluminous breasts, it is advisable to use 2cc of patent blue, because there is less lymphatic drainage. The injection is performed before skin preparation, so that the time from injection to incision is at least 5 minutes.

For tumours in the upper outer quadrant, the SLN can be performed through the same incision that is used for tumour excision. For these patients, the tumour is excised first and the SLN biopsy is than carried out. In the other cases, SLN biopsy is done first and the primary tumour is removed as a second step. In these patients, the incision is made at the inferior margin of the axillary hair line, in such way that it can be incorporated into the standard incision should a formal ALND be required.

The subcutaneous fat is divided, and the axillary fascia is opened. At this point, localisation of the area of greatest radioactivity is performed with a handheld gamma-ray probe and a careful search is made for a blue lymphatic channel leading to a radioactive, blue-stained lymph node. A SLN is defined as any blue or radioactive (“hot”) node with a 10 :1 ex vivo gamma-probe radioactivity ratio of SLN to non-SLN. If there is only weak signal of radioactivity, the collimator can be removed to facilitate the localisation of the SLN.

The SLN is excised, and the vascular pedicle is coagulated. The amount of tracer uptake and the colour of each SLN are noted. After all SLNs have been removed, the axilla is scanned with the probe to document that activity levels have returned to background levels. Each SLN is submitted separately to the pathologist for macroscopy, imprint cytology and frozen section if indicated. In the case of a positive intraoperative findings, a level I-II ALND is performed in the same operation time. In the case of a negative intraoperative finding, the definitive histopathologic work-up may still reveal a metastasis, requiring secondary axillary surgery. Meticulous haemostasis is performed. The dermis is closed with interrupted 3-0 absorbable sutures, and the skin is closed with a running 4-0 absorbable suture.

**Special cases.**
- When no axillary SLN can be identified (1%), a complete ALND needs to be performed.
- The SLN may occasionally be contiguous to a node or nodes that are clinically suspicious because of character or size. Since the purpose of the procedure is to identify the first node to which metastasis has spread, it is appropriate if this suspicious node is removed along with those that have been identified by dye or the radio-labelled colloid. That this node did not pick up the dye/Tc99m itself does not vitiate the procedure, nor
should this be considered a failed or false negative biopsy. In some cases there may be no observed pickup of dye in a node, but a blue-stained lymphatic vessel can be seen leading directly to a node. This node should be considered the SLN and removed.

* Although the SLN is usually an axillary node, and most commonly in the central group of level I, it may be an intra-mammary node, an interpectoral (Rotter’s) node or an internal mammary node. Rarely, the internal mammary chain may be the only site that picks up the isotope. More often, drainage to the internal mammary node(s) is seen along with drainage to the axillary nodes.

* To perform a SLN biopsy during mastectomy, the same selection criteria are used as for patients undergoing breast conservation surgery. The SLN biopsy is usually performed after dissection of the cranial flap.

Training. As with all new procedures, there is a learning curve for the SLN procedure. It has been suggested that each surgeon has to perform 30 SLN biopsies followed by completion ALND to assure a false negative rate < 5% and an identification rate > 90%. This obligates an enormous number of breast cancer patients to unnecessary ALNDs. It may be more reasonable to validate an institutional SLN program inclusive of the nuclear medicine, radiology, pathology and surgery rather than certifying individual surgeons. Validated members of the SLN program then proctor the cases of new addition to the program. Using this protocol, the rate of localization for every surgeon should be >95%.

Complications. Allergic reactions to patent blue or to the radio-colloid are very rare but exist. In our centre, one patient developed a peroperative anaphylactic shock on patent blue, and another patient developed blue urticaria over the ipsilateral thorax and axilla.

Recent studies have demonstrated a finite risk of lymphedema and sensory morbidity associated with SLN biopsy. The reported overall complication rate among women undergoing SLN biopsy alone is 3% compared with 35% for women undergoing SLN biopsy plus ALND.

The morbidity associated with SLN biopsy and SLN biopsy plus ALND are being examined prospectively in the ACOSOG Z-0010 and Z-0011 trials as well as the NSABP- B-32 trial.

The question of axillary recurrence after a negative SLN biopsy has not been fully answered. Nineteen studies report comparable excellent results in patients with a negative SLN biopsy without ALND, with axillary recurrences ranging from 0-3% at 14-46 months of follow-up. After an ALND recurrence in the axilla is ranging from 0-2.1% at 40-180 months of follow-up. The only available randomized trial that has compared standard ALND with SLN biopsy alone showed no difference in terms of locoregional failure after a median follow-up of 46 months. It is advisable to perform an ultra sound of the axilla in addition to the yearly follow-up mammogram and ultra sound of the breast.

Patients should be completely informed about the procedure: fail rate, risk of secondary operation in pN+ cases, temporary blue coloration of the breast and urine, allergic reactions, e.g.

79. — AXILLARY LYMPH NODE DISSECTION IN BREAST CANCER.
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Axillary lymph node dissection in breast cancer (ALND) has traditionally been a routine component of the management of early breast cancer. The benefits of ALND include its impact on disease control, its prognosis value, and its role in treatment selection. The axillary lymph nodes (ALN) receive 85% of the lymphatic drainage from all quadrants of the breast, the remainder drains to the internal mammary (IM) chain. The likehood of ALN involvement is related to tumor size and location, histologic grade, and the presence of lymphatic invasion.

ALND extent can be defined by either the number of axillary LNs resected or their anatomic location. ALN are divided into 3 levels based upon their relationship to the pectoralis minor muscle:

- Level I: inferior and lateral to the pectoralis minor muscle
- Level II: posterior to the pectoralis minor muscle and below the axillary vein
- Level III: medial to the pectoralis minor and against the chest wall

Major morbidity is infrequent but includes injury or thrombosis of the axillary vein, injury to the motor nerves and lymphedema. Minor complications are common and include seroma formation, shoulder dysfunction, loss of sensation in the distribution intercostobrachial nerve and mild edema of the arm and breast.

The gold standard procedure for axillary assessment in breast cancer is a level I and II ALND. Routine removal of level III is unnecessary for staging. The typical level I/II dissection should yield > 10 ALN, although the range is variable.
81. — HOW TO CONSTRUCT A LARGE CERVICAL ESOPHAGOGASTROSTOMY ?
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Classic manual end-to-side techniques of esophagogastrostomy after gastric pull-up to the neck carry a rather high risk of fistula and stricture formation. In order to solve this annoying problem, we devised an original suture technique called the terminalized side-to-side semi-mechanical technique (Collard et al. ; Ann Thorac Surg, 1998). It consists of the application of an endostapler across the gastric and esophageal walls placed side by side, so as to create a V-shaped posterior opening between the two lumina, while the anterior aspect of the anastomosis is hand-sewn using a classic running suture. Performance of this procedure is safer with the denuded whole stomach than with a greater curvature tube as an esophageal substitute because in the former gastric tailoring technique, staple lines at the anastomosis do not interfere with the post-tubulization staple line.

The cross-sectional area achieved with the semi-mechanical technique is 65% larger than that obtained with the classic manual end-to-side esophagogastrostomy on barium swallow study performed 2 months after operation.

Construction of a large-bore anastomosis makes postoperative endoscopic dilations very uncommon, even in those patients having had transient postoperative anastomotic fistula. In addition, most patients are able to swallow large pieces of solid food without any difficulty one or two weeks after operation, which is not the case for most patients having a classic manual end-to-side esophagogastrostomy.

An intriguing observation is the possible occurrence of a late (i.e. 2-4 weeks postoperatively) anastomotic fistula although immediate barium swallow study was normal and the patient was eating usual food.

The semi-mechanical technique is, of course, contra-indicated in tumors arising in the cervical esophagus.

82. — HOW TO CONSTRUCT A GASTRIC TRANSPLANT AS ESOPHAGEAL REPLACEMENT ?
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Gastric tubulization techniques were developed widely (Akiyama, 1978 ; Gignoux, 1978) according to the theoretic concept that the esophageal tube had to be replaced by another tubular structure. Stapling resection of the lesser curvature of the stomach allows removal of the potentially involved lymph nodes within the lesser omentum along the upper four branches of the left gastric artery. It also unfolds the right side of the stomach, so as to lengthen the distance between the pylorus and the fundus (from 4 to 11 cm in cadavers and by 8.9 ± 2.5 cm in vivo).

Denudation of the lesser curvature, an original technique devised in our Unit (Collard et al. ; Dis Esophagus, 1989 ; Ann Thorac surg, 1995) is carried out by division of the terminal rami of both right and left gastric vessels flush with the gastric wall from the pylorus up to the cardia. The lesser omentum and its lymph nodes are thus separated from the gastric wall while the right side of the stomach is unfolded. The esophagus is separated from the stomach by application of a linear stapler on the cardia, and the short staple line is oversewn using interrupted sero-serosal covering sutures.

Advantages of the denudation technique over the resection technique are :

- Maintenance of the whole volumetric capacity of the stomach (greater amount of food at meals ; fewer meals over the day).
- Maintenance of all the intramural vascular pathways between the right gastro-epiploic vessels and the anastomotic site in the fundus (lower risk of fistula and stricture formation).
- Maintenance of all the nervous ganglia in the myenteric plexus (better spontaneous antral motor recovery over time ; better motor response to erythromycin at early follow-up).
- Reduction of the cost of gastric tailoring (fewer cartridges of staples needed).
- Performance of a semi-mechanical esophagogastrostomy is safer (staple lines at the anastomosis do not interfere with the post-tubulization staple line).

Resection of the esophagus for benign disease or high-grade dysplasia can be done without truncal vagotomy (vagus-sparing esophagectomy ; subtotal mucosectomy). Denudation of the upper two thirds of the lesser curvature according to an original technique devised in our Unit (Collard et al. 1997 ; Dis Esophagus, 2003) that maintains the nervous input to both the antrum and pylorus through the nerves of Latarjet allows the elevation of the so-called antrally-innervated whole stomach to the neck with strict maintenance of a normal antral contractility postoperatively.
The concept of supra-hilar hepatico-jejuno-lysis is to capitalize on the long (3-4 cm) extrahepatic portion of the left hepatic duct. Indeed, the bile duct is anatomically located anteriorly and superiorly to the hilar vessels. Based on these two anatomical conditions, the purpose of the HEPP-COURNAUD procedure is to access the main biliary convergence and the origin of the left hepatic duct by “lowering” the hilar plate after having dissected and elevated the quadrate lobe from the hepatic hilum. Ultrasonic dissector is the best tool to be used to facilitate this maneuver. After that, the main biliary convergence and the origin of the left hepatic duct are fully exposed. The dissection of the left hepatic duct is pursued to the left side as far as possible, respecting a small arterial branch to segment IV. Then, the bile duct is identified by direct needle puncture and bile is sampled for culture. The anterior surface of the left hepatic duct is incised with a knife. A dissecting forceps is introduced in the bile duct and the incision of the anterior wall of the bile duct is extended by scissors to the secondary biliary divisions on the left side and to the main biliary convergence and the origin of the right hepatic duct on the right side, allowing to obtain the largest biliary stoma. Extension of the biliary incision to the right hepatic duct is more difficult, mainly due to the vertical direction and the rapidly intrahepatic entrance of the right hepatic duct. To improve the access to the right hepatic duct, incision of the gallbladder bed is performed up to the origin of the right hepatic duct. Extended division of the origin of the right hepatic duct is made by using ultrasonic dissector as far as possible into the liver (usually over 1-2 cm). Scared tissue must be economically excised because the HJA must be constructed on healthy biliary mucosa. Then, a classical hepatico-jejuno-lysis is constructed using a long (60-80 cm), Roux-en-Y jejunal loop. Hepatico-jejuno-lysis is made by using resorbable stitches (PDS 5/0 or 4/0) with “mucosa-to-mucosa” approximation. The posterior layer of the hepatico-jejunal anastomosis is firstly constructed with extraluminal knots positioning. When the bile duct is not dilated or if reconstruction of the main biliary convergence is required, transanastomotic silastic intubation could be used, being exteriorized at the supra-meso-colic portion of the Roux-en-Y jejunal loop through the anterior abdominal wall. The anterior portion of the HJA is made by using the same technique. Finally, end-to-side jejuno-jejuno-lysis is made, at 60-80 cm of the bili-digestive anastomosis, using a right transmesocolic route.

In case of Bismuth type IV biliary stricture (2), with interruption of the main biliary convergence and complete separation of the right and left bile duct systems, building a biliary “neo-convergence” is required. The scarred biliary convergence is dissected from the surrounding tissue and posteriorly from the hilar vessels by sharp dissection with ultrasonic dissector. The scarred biliary convergence is then excised until obtaining healthy biliary tissues on the left and right hepatic duct on both sides. According to the distance between the left and right hepatic duct, two technical options could be used. When the left and right hepatic ducts are too far from the other one, a double HJA is constructed separately on the same Roux-en-Y jejunal loop. If the left and the right hepatic duct are close together, biliary reconstruction of a “neo-convergence” is performed by approximating the lateral portion of each duct with interrupted suture using 5/0 resorbable PDS stitches. Again, positions of the knots are located outside of the bilio-digestive anastomosis. At the end of the procedure, a new “neo-convergence” is so created with single biliary stoma. The above-mentioned technical features are important to achieve high-quality supra hilar hepatico-jejuno-lysis, but the timing of biliary repair is out of the most importance to get excellent long-term results. Indeed, waiting up to 3-4 months until bile duct dilatation, far away from the local inflammation and thermal or vascular injuries due to the primary bile duct injury is also a key-factor of success. In our experience, such HEPP-COURNAUD procedure (3) for patients suffering from benign biliary strictures is associated to a 90% success rate at 10 years of long-term follow-up.

References
88. — GUIDELINES IN BARIATRIC SURGERY.
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Parallel with the obesity pandemic, there has been an exponential rise in the use of bariatric surgery in severely obese patients. The superior efficacy of surgery over medical and dietary approaches in obtaining durable weight loss and improvement of quality of life has been demonstrated in observational studies. Recent reports, however, have highlighted the risks associated with extensive surgery in obese patients with a one year mortality exceeding 7% in male patients (JAMA 2005; 294: 1903-1908). Strict patient selection and a multidisciplinary approach are therefore mandatory.

Although there is a striking paucity of prospective clinical trials keeping in mind the number of procedures performed yearly, several scholarly surgical societies have proposed guidelines to assist the individual surgeon in decision making. This talk will focus on the value of guidelines in bariatric surgery and critically assess their scientific evidence base, practical utility and medicolegal implications.

89. — OBESITY SURGERY IN BELGIUM. THE HEALTH INSURERS’ VIEW
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Obesity is an increasing health problem in most industrialised Western countries. In the US more than 5% of the adults showed a BMI higher than 40 in 2002. In Belgium a national survey found 44% overweight (BMI > 25) and 12% obesity (BMI > 30) among the population in 2002, and – comparable with other West-European countries – the number of children with obesity has doubled since 1990. About 0.5% of the adult Belgian population have morbid obesity, a condition that is associated with adverse health conditions and early mortality and causes psychosocial dysfunctioning.

Several studies suggest that bariatric surgery remains probably the only option for durable weight loss in patients with morbid obesity. Between 1995 and 2005 in Belgium gastric bypass interventions increased six fold from 661 to 3,976 and gastroplasty interventions showed an identical increase up to 2004 (873 to 5,495) but have diminished with 19% in 2005.

The Technical Medical Committee of the National Health Insurance (RIZIV) proposed in 2005 specific intervention codes and a proper reimbursement for open and laparoscopic surgery procedures under restrictive conditions for morbidly obese (BMI > 40), but the application date has been delayed since. Not only the extra budget to cover these surgical interventions and medical disposables is not yet created, but also the evidence based character of bariatric surgery and the exact circumstances of medical indication and procedure are still debated in Belgium.

Although there is no doubt that bariatric procedures, besides durable weight loss, improve significantly the comorbidities of morbid obesity as diabetes, hyperlipidemia, hypertension and obstructive sleep apnea, there are indications that the risk of complications and the rate of readmission are higher than previously suggested and are associated with advancing age and with the learning curve of an increasing number of new obesity clinics. There for the government has requested the Technology Assessment Institute (KCE) to make a study on bariatric surgery with possible recommendations for accurate patient selection, for multidisciplinary centres, for surgeon and centre volume and for the for the different types of surgery.

The need for this complementary study is argued on the fact that research on bariatric surgery until now is reported primarily through the experience of practising surgeons, focused on selected outcomes and in the absence of an adequate control group without an assessment of the total impact of bariatric surgery on the population and on the health care system at large.

However, while preventing obesity should remain the focus of the Belgian health care policy, the place of bariatric surgery in the treatment of morbid obesity – adequately covered by health insurance – has to be determined without further delay, since international evidence of its beneficial effects and accepted guidelines for its use are already available.
91. — BELGIAN REGISTRY FOR BARIATRIC SURGERY.
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The project of a registry for bariatric surgery is born out of few surgeons of the French speaking community in Belgium; it is now extended to the Flemish community of the country. The study is multicentric, prospective and consecutive. The aim was to draw up an inventory, to make a picture of the bariatric surgery in Belgium and Luxembourg during 1 year (from 1st October 2005 till 30th September 2006). About 1200 patients will be collected and analysed. The study will determine the following features:

- Selection criteria for the different surgical techniques and approach (MIS or open).
- Geographic repartition of the various operations.
- Morbidity –Mortality.
- Follow-up with specific reference to Baros score and% of excess weight loss.

All the medical data are introduced in a secured Internet site (UniWeb Company) on which each surgeon can visualize only the data of his own patients but not the patients of the other surgeons. It has been recommended to inform the ethical committee of each hospital and to obtain the informed consent of the patients. The inclusion criteria are any obese patient eligible for obesity surgery according to commonly accepted criteria (IFSO). Redo-procedures and two-steps operations are also included. Exclusion criteria are: psychotic patients, drug addict, alcoholic patients, excess weight due to endocrinological cause. Each surgeon is totally free from the indication for surgery, the surgical technique and the type of material used. This total freedom is a keypoint of the registry. Also, a minimum of 15 cases per year and per surgical team is required. The inclusion of patients is completely anonymous, what makes the registry more reliable and avoids the “forgetting” of some difficult patients!

An identification number has been attributed to each surgeon; this number is only known by himself and by the scientific coordinator of the study. Finally, the surgeon will be aware of his own results in comparison with those of the whole series. Such a study is expensive and would not have been possible without the financial and logistical support of the industry (Johnson & Johnson Medical). The preliminary results of the first 6 months will be presented.

93. — ANESTHESIA FOR AMBULATORY HERNIA REPAIR : OPTIMAL ANESTHETIC TECHNIQUE AND POSTOPERATIVE ANALGESIA
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Overview
Anesthesia for inguinal hernia repair
- Available anesthetic techniques
- Influence of anesthetic technique on outcome
  - which is the preferred technique ?
Postoperative analgesia
- Prevention of postoperative pain
- Local analgesic techniques
- Drug therapy
  - which is the optimal strategy ?
Available anesthetic techniques
Local anesthesia
Loco-regional anesthesia
  Epidural
  Spinal
  Regional nerve block
General anesthesia
  Standard inhalation anesthesia
  Total intravenous anesthesia (TIVA)
  Muscle relaxants

Local anesthesia
Pro
  Rapid recovery and discharge
  Low nausea and vomiting
  Immediate postoperative analgesia
  Low cost
Con
  Learning curve
  Time consuming
  Pain during infiltration / surgery
With IV sedation: “monitored anesthesia care”

Epidural anesthesia
Pro
  Smooth onset
  Easily controllable
Con
  Relatively slow onset
  Long duration of action

Spinal anesthesia
Pro
  Rapid onset
  Reliable effect
  No headache with 27G needles
  Low dose unilateral spinal anesthesia
Con
  Transient Neurologic Symptoms
    Most frequently after lidocaine use
  Quite long duration of action
  Urinary retention

Regional nerve block
Illoinguinal / iliohypogastric nerve block
  Not suited for surgery
  OK when combined with local infiltration
  Combined illoinguinal blockade and local infiltration anaesthesia for groin hernia repair—a double-blind randomized study
Paravertebral block
  Not well established
  Multiple injections required
  An. Analg. 2006
“Balanced” general anesthesia
Ultra-short acting drugs
  IV induction: propofol, midazolam, alfentanil
  Maintenance by inhalation: sevoflurane, desflurane

Total intravenous anesthesia (TIVA)
Drugs
  analgesia: remifentanil
  hypnosis: propofol
  relaxant: ?
Pro
  Rapid induction
  Rapid recovery
  Less nausea and vomiting
Con
  Availability of syringe pumps
  Cost?

Airway management
Spontaneous breathing with laryngeal mask
Muscle relaxation and endotracheal intubation
  Most frequent cause of anaphylactic reaction
  Incidence of PONV increased by neostigmine (?)

Influence of anesthetic technique on outcome
  Patient satisfaction: per- and post-operative
  Early discharge
  Postoperative pain
  Recurrence rate

Anesthetic technique and outcome
Patient satisfaction: per- and post-operative
Type of anaesthesia and patient acceptance in groin hernia repair: a multicentre randomised trial.
Nordin P, Hermell H, Unosson M, Gunnarsson U, Nilsson E.
Ostersund Hospital, Ostersund, Sweden Hernia. 2004 Aug; 8(3): 220-5
LA
  More pain during surgery
  Variable acceptance by patients
  Delayed postoperative pain
  Less nausea and vomiting
Overall satisfaction RA = GA = LA
Quality of life RA = GA = LA

Anesthetic technique and outcome
Early discharge
Regional anesthesia
  “safe” local anesthetics are long-acting
  ± 3 hrs until complete regression of block
General anesthesia
  Large choice of short-acting drugs
    IV
    Inhalational
Local anesthesia
  No need for recovery: “Fast tracking”
Anesthetic technique and outcome
Postoperative pain
Local anesthesia
- Discharge without pain
- Arrangement for alternative analgesia when effect wears out
General anesthesia
- Combined with local infiltration / block
- Timely (= peroperative) IV administration of analgesics

Anesthetic technique and outcome
Recurrence rate
LA associated with higher risk of reoperation for recurrence after primary hernia repair
Choice of anesthesia and risk of reoperation for recurrence in groin hernia repair
Nordin P, Haapaniemi S, van der Linden W, Nilsson E.

Anesthesia for inguinal hernia repair
The preferred technique

Optimizing anesthesia for inguinal herniorrhaphy : general, regional, or local anesthesia ?
Editorial by Henrik Kehlet and Paul F. White
Epidemiology in general hospitals
- General anesthesia 60% - 70%
- Spinal / epidural 10% - 20%
- Local infiltration 5% - 15%
Specialized hernia centers
- Local infiltration 95%

" in patients undergoing inguinal herniorrhaphy there is a surprising discrepancy between the documented benefits of local anesthesia in reducing postoperative pain and anesthetic-related morbidity (as well as perioperative costs) and the frequency with which this technique is used for this operation "

Prevention of postoperative pain
Surgical technique
- Laparoscopic vs. Open
Preemptive analgesia
- Looked promising
- Not validated
Per-operative local infiltration
- Long acting local anesthetic drug
  - (levo)bupivacaine, ropivacaine >> lidocaine
- Slow release local anesthetics
  - Experimental lysosome formulation

Prevention of postoperative pain
Ilio-inguinal / iliohypogastric nerve block
- Bupivacaine 0.5% 15 cc (+ clonidine 1 mcg/kg ?)

Postoperative local analgesic techniques
Continuous local infusion devices
- Disposable elastomeric pumps
- Bupivacaine 0.25% 2cc/hr
- Concept attractive
- Modest improvement in pain scores
- High additional cost
Continuous local anesthetic infusion for pain management after outpatient inguinal herniorrhaphy

**Postoperative oral analgesics**
Paracetamol
NSAID’s
COX2 inhibitors
Opioids in ambulatory surgery?

à Multimodal postoperative analgesia

**COX2 inhibitors: forget it?**
No increased risk of bleeding, BUT:
- Gastro-intestinal complications: no advantage
- Increased risk of cardiovascular events
- Rare (but severe) skin reactions

**Postoperative analgesia**
The optimal strategy

**Multimodal analgesic strategy**
“Gentle” surgical technique
Local infiltration / block
Timely (= peroperative) IV administration of analgesics

Paracetamol
1 (2 ?) g IV 30 min before end of surgery

NSAID’s
Ketorolac 20 mg IV or Tenoxicam 40 mg IV or …

Opioids?
Tramadol 100 – 200 mg IV

At home, same drugs orally at fixed intervals

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94.— INFLUENCE OF THE ‘ONE-DAY-PRESSURE’ ON SURGICAL TECHNIQUE FOR ABDOMINAL WALL REPAIR
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Social security reimbursement rules have been urging hospitals and doctors to spend less money in giving the same, or better, treatment to patients. One of these directives directly concerns the hospital stay. More and more types of surgery have been converted to a one-day setting in almost all hospitals.

We describe the evolution of treatment for abdominal wall hernias in our University Hospital and look into the changed therapeutic strategies thus applied.

In abdominal wall repair, standard operative techniques in our centre consisted of Lichtenstein or laparoscopic pre-peritoneal repair (TEP) for inguinal hernias and open preperitoneal repair or primary suture for umbilical and epigastric hernias.

We found that a Lichtenstein repair in several of our patients was too painful and that overnight stay was too frequent to successfully apply this technique in an ambulatory setting.

We started using the Kugel® hernia repair in selected cases to try and shorten hospital stay. This tension-free technique consists of open, preperitoneal mesh placement, similar to that of TEP. From our own prospective data on 450 Kugel® patch repairs, we know that 99% of planned patients eventually left the day of surgery, with low morbidity and recurrence rates.
It has been suggested that mesh repair of umbilical and epigastric hernias larger than 1 cm diameter could be superior to primary suture. The extensive dissection needed for preperitoneal placement of a mesh however, proves to be rather painful, not permitting early discharge. In our one-day setting, we have introduced the Ventralex® intraperitoneal patch to repair umbilical and epigastric hernias measuring one to three centimetres in diameter. This technique can also be performed under local anaesthesia in patients with cardiorespiratory problems. Here as well, some preliminary results are discussed.

In conclusion, reimbursement guidelines have indirectly influenced us in the choice of surgical technique. However, several new meshes used in one-day surgery, are more expensive than the traditional ones and that cost is no longer carried by the social security system or the private insurances, but by the patient himself.