COMPUTED TOMOGRAPHY OF THE POST-SURGICAL ABDOMEN: WHAT TO LOOK FOR
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**Purpose:** Distinguishing post-chirurgical recoveries from the usual ones implies great difficulty. The aim of this work is to go through everything the radiologist must know about the operated abdomen.

**Methods:** Cases occurred in the last two years were reviewed

1. Secondary anatomic changes to the surgical technique used
2. Predictable changes in the immediate postoperative period
3. Most common complications

**Results:** Changes in anatomy depend on the carried out intervention. In the days following the operation pneumoperitoneum or small collections are usual discoveries, and are due to disappear on their own. The most frequent complications are bleeding, infection (associated or not to fistulas), obstruction and hernias or eventrations. Other complications were: thoracic, foreign bodies or pancreatitis.

**Conclusion:** CT allows to examine postsurgical abdomen detecting changes such as active bleeding or small absceses. It requires a keen knowledge of the surgical technique and of the most frequent findings in these particular patients.

SINGLE-STEP TREATMENT WITH COMBINED RADIOFREQUENCY AND EMBOLIZATION IN HEPATOCELLULAR CARCINOMA. 10 YEARS PROSPECTIVE STUDY
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**Purpose:** We show our results of combined treatment with radiofrequency and embolization in non surgical HCC.

**Material and Methods:** From 2001 to 2012 we treated 121 consecutive patients with early and intermediate HCC. Percutaneous radiofrequency and embolization were performed simultaneously. Response was evaluated according mRECIST criteria.

**Results:** Complete response for < 3 cm, 3 to 5 cm and > 5 cm tumors was 100%, 79.6%, 4209%. Distant recurrence was 36.4%. Median survival was 37 months. The 1, 2, 3, 5 and 8-year overall survival were 92%, 77%, 62%, 42%, 31%. Histopathology differentiation (p = 0.0079), Child-Pugh (p = 0.0073), and number of tumors (p = 0.0122) were survival significant prognostic factors. Major complications were 6.9% and 0.88% mortality.

**Conclusion:** Single-step combined therapy increases the volume and intensity of ablation obtaining a better response and fewer recurrences. The association of embolization & radiofrequency is safe. There is a trend toward survival improvement.

DETECTION OF CORONARY DISEASE IN STUDIES OF AORTIC CT ANGIOGRAPHY


**Background:** ECG gating in CT angiography of the thoraco-abdominal aorta with high-pitch acquisition mode allows for diagnostic visualization of the coronary arteries and aorta in a unique acquisition.

**Objectives:**
- To evaluate the feasibility of using a high-pitch dual source ECG-gated acquisition protocol.
- To determine the incidence of coronary heart disease, stenosis and impact on treatment.
- To correlate patient heart rate with study quality.
- To quantify the radiation dose

**Methods:** 52 patients underwent CT angiography of aorta.

**Results:** Coronary disease was found in 38 patients, 18 presenting with hemodynamically significant stenosis. Diagnostic image quality good or excellent in all cases. Patients with average heart rate < 68 beats/min and heart rate variability < 1.2 beats/min had excellent diagnostic image quality in all coronary. Average radiation dose: 4.4 mSv.

**Conclusion:** High-pitch ECG-gated dual-source CT angiography of the thoraco-abdominal aorta delivers a diagnostic visualization of the coronary arteries at a low radiation dose.

PRESURGICAL IMAGING TECHNIQUES IN FREE PERFORATORS FLAPS: REVIEW, STATE-OF-THE-ART AND EVIDENCES
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**Introduction:** Many imaging techniques are applied for free-perforator flaps, including Doppler (duplex), CT-angiography (CTA) and MR-angiography (MRA). Objective is to provide an evidence-based review and to establish their indications and capabilities applied in the most frequent free-perforator flaps.

**Methods:** Basic, advantages and disadvantages for duplex, CTA and MRA are reviewed and applied to deep inferior epigastric artery (DIEP), superior gluteal artery perforator (SGAP), anterolateral thigh (ALT) and distal lower leg propeller perforator flaps. The evidence supporting the use of various imaging modalities was investigated by searches of the PubMed and Medline databases.

**Results:** CTA is the current gold-standard for any perforator flap. Duplex imaging has too many false-positives results for a real time-consuming exploration. MRA is probably the imaging technique of the future.

**Conclusion:** Further trials are needed to conclusively validate imaging in reconstructive surgery but current evidence demonstrates that it can improve outcomes. CTA is the current gold-standard.

INVESTIGATION OF DIFFERENT SIGNALING PATHWAYS OF INFLAMMATORY RESPONSE IN ANIMAL MODEL OF FULMINANT HEPATITIS
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Rabbit hemorrhagic disease virus (RHDV) causes a viral hepatitis in rabbits that displays clinical, anatomopathological and transmission mode similarities to fulminant human viral hepatitis. Thus, it is the first successful model that satisfies the criteria applicable to an animal model of fulminant hepatic
PRESENCE AND CONSULTATION OF SURGICAL TERMINOLOGY IN THE SPANISH EDITION OF WIKIPEDIA

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Background: Most e-patients search for their disease on the Internet. Wikipedia is the biggest consultation page and one of the 10 most visited sites.


Results: 461 headings retrieved. 419 (90.89%) were in Wikipedia, 311 (67.46%) directly and 108 (23.43%) secondarily with 5.86% disambiguation. Actuality/obsolescence of information ranged 1261-0 days; median 479.39; average 888.29 ± 71.70 days. (IC 95%: 49.05–78.93); (Fig 1). Studied terms consultation ranged 10437-3 days. Median 479.39; average 888.29 ± 71.70 visits/day (IC 95%: 747.25–1029.33).

Conclusions: Wikipedia is a good tool for surgical terms consultation and dissemination, with a high acceptance degree. Terminology update is outstanding. Small number of ambiguous terms (1/20) may confuse uninformed readers. Experts' supervision should be considered.

Fig. 1 Actuality/obsolescence. Days elapsed since the last modification of surgical terminology.

QUICK RESPONSE CODE (QR-CODE): PERSPECTIVES AND APPLICATIONS IN SURGICAL PRACTICE

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Background: Quick Response codes (QR) store information in a bidimensional binary matrix, capable of storing up to 7366 numeric characters or 4464 alphanumeric ones, saving up to 7 Kbytes. The possibility to generate QR code containing URL links facilitates navigation into the Internet (Figure 2).

Objective: Applications of QR code in surgery.

Methodology: From the study of the use of QR codes in the industrial frame, it can be derived new proposals to use them in the context of the surgical practice.

Results: QR codes allow:
- Automatic patients identification; access to clinical file
- Information to the patient
- Use of QR code to boost education about health.
- Research protocols.
- Access to scientific documentation.

Conclusion: Potential uses for QR codes in surgical practice are only limited by the developers' imagination.

The aim of this study was to evaluate the potential chemopreventive effect of flavonoid quercetin on IL-6/JAK/STAT3 signalling pathway in liver of rats with cirrhosis induced by common bile duct ligation.

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QUERCETIN INHIBITS IL-6/JAK/STAT3 SIGNALLING PATHWAY IN LIVER OF RATS WITH CIRRHOSIS INDUCED BY COMMON BILE DUCT LIGATION

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The aim of this study was to evaluate the potential chemopreventive effect of flavonoid quercetin on IL-6/JAK/STAT3 signalling pathway in rats with common bile duct ligation (CBDL). Rats were divided into four groups: rats subjected to CBDL, Sham (rats subjected to simulated CBDL), quercetin-treated sham, and quercetin-treated CBDL. Quercetin (50 mg/kg) was administered for 2 weeks starting on day 14 after surgery. Overexpression of mRNA levels of IL-6 was observed in liver of CBDL rats. Bile duct ligation also increased the phosphorylation of JAK and STAT3 proteins in cirrhotic rats. Quercetin consistently caused in treated cirrhotic animals a reduction in IL-6 mRNA levels compared with untreated CBDL rats. This result was associated with lower phosphorylated levels of JAK and STAT3 in quercetin-treated CBDL rats. Findings suggest that quercetin treatment inhibits the IL-6/JAK/STAT3 signalling pathway. This effect could contribute to the chemopreventive properties of quercetin.
GLUTAMINE TREATMENT ATTENUATES ENDOPLASMIC RETICULUM STRESS AND INFLAMMATION IN TNBS-INDUCED COLITIS

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Endoplasmic reticulum (ER) stress and proinflammatory mediators play an important role in the pathogenesis of inflammatory bowel disease. Glutamine improves outcomes of in vitro and in vivo colitis models. Our purpose was to investigate the beneficial effects of glutamine. Colitis was induced in rats by administration of TNBS. Glutamine was given for 2 and 7 days. On 3rd or 8th day rats were killed and the distal colon was collected. Caco2 cells were cultured with brefeldin A as ER-stressor and treated with glutamine for 12 h. TNBS administration induced an increase of Bip expression, a major marker of the ER stress response, and cytokines and these effects were decreased by administration of glutamine. Brefeldin A treatment induced a significant up-regulation of Bip in Caco2 and treatment with glutamine decreased this effect. Data obtained indicated that early inhibition of the ER stress response contribute to protection by glutamine against damage in colitis.

THE ADMINISTRATION OF QUERCETIN ATTENUATES INFLAMMATION IN A MURINE MODEL OF STEATOHEPATITIS

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NASH is a metabolic disorder characterized by the accumulation of fat in hepatocytes, inflammatory infiltrate and fibrosis. Flavonoids have shown a pharmacologic concentrations of melatonin under normoxia or hypoxia. Hif1α phosphorylation was measured by Western blot. Hif1α and VEGF expression were analyzed by RT-qPCR and Western blot. STAT3 phosphorylation was measured by Immunofluorescence. The optical trocar allows a faster pneumoperitoneum and with a lower number of attempts. Both techniques are equally safe.

CONCLUSIONS: Our results suggest that FABP1 gene expression modulation by transcription factors contributes to long-chain fatty acid uptake and processing capacity impairment observed in NAFLD. Supported by BFU2010-15784 and GR5-482/A.10. CIBERehd is supported by Instituto de Salud Carlos III.

PROSPECTIVE STUDY COMPARING THE VERESS NEEDLE AND THE ENDOPATH® XCEL™ TROCAR WITH ENDOSCOPIC CAMERA AS LAPAROSCOPIC ACCESS TECHNIQUES IN GENERAL SURGERY

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The most popular access technique in laparoscopic general surgery is the Veress needle. The use of the Endopath® XCEL™ trocar with an endoscope is a valid alternative.

OBJECTIVES: To compare the time to create pneumoperitoneum, number of attempts, and immediate access-related complications.

METHOD: Prospective analysis of 135 procedures.

RESULTS: Mean BMI was 28 (16–45). The Veress needle was used in 52 cases and the optical trocar in 83, obtaining pneumoperitoneum in all of them. There were not significant differences regarding the number of attempts (p = 0.443). More of the optical trocar cases required only one attempt (5%). Pneumoperitoneum was obtained faster with the optical trocar (p < 0.001).

CONCLUSIONS: The optical trocar allows a faster pneumoperitoneum and with a lower number of attempts. Both techniques are equally safe.

 NANOMETRIC BIOMATERIALS IN CARDIAC REGENERATION

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INTRODUCTION: Acute myocardial infarction (AMI) normally happens when blood supply to the heart is interrupted. Current treatments under development mediated STAT3 phosphorylation. Treatment with either melatonin or Stattic (a STAT3 inhibitor) reduced Hif1α, phospho-STAT3 and VEGF protein expression.

CONCLUSIONS: Our results provide evidence pointing to melatonin as a potent anti-angiogenic agent in HCC, by inhibiting STAT3/Hif1α/VEGF pathway.

STUDY OF FABP1 GENE EXPRESSION AND TRANSCRIPTION FACTORS INVOLVED IN ITS REGULATION IN AN IN VIVO NAFLD MODEL IN MICE

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INTRODUCTION/aims: Liver fatty acid binding protein (FABP1) regulates fatty acid trafficking and partition. Our objective is to investigate the transcription factors involved in the control of human FABP1 and their regulation in nonalcoholic fatty liver disease (NAFLD).

METHODS: C57BL/6J mice fed with a MCD diet for 5 weeks were used. Control mice received the same diet supplemented with methionine and choline. The expression of steatohepatitis was proven histologically. C/EBPα, PPARα, FOXA1 and FABP1 gene expression was determined by RT-qPCR.

RESULTS: We observed a progressive inhibition of FABP1 gene expression associated to NAFLD. Our studies indicate that FABP1 is transcriptionally induced by PPARα and FOXA1 and inhibited by C/EBPα. We observed a progressive inhibition of PPARα and FOXA1 and an early induction of C/EBPα associated to NAFLD.

CONCLUSIONS: Our results suggest that FABP1 gene expression modulation by transcription factors contributes to long-chain fatty acid uptake and processing capacity impairment observed in NAFLD. Supported by BFU2010-15784 and GR5-482/A.10. CIBERehd is supported by Instituto de Salud Carlos III.

MELATONIN EXERTS ANTI-ANGIOGENIC ACTIVITY VIA INHIBITION OF STAT3/HIF1α/VEGF IN HEPG2 CELLS

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INTRODUCTION: Hepatocellular carcinoma (HCC) responses to hypoxia with aberrant visualization. Hif1α controls oxygen homeostasis inducing VEGF expression. STAT3 promotes Hif1α stability and transcriptional activity. Here, we examined the role of STAT3/Hif1α/VEGF in melatonin anti-angiogenic effects in HCC.

MATERIALS AND METHODS: HepG2 cells were treated with physiologic and pharmacologic concentrations of melatonin under normoxia or hypoxia. Hif1α and VEGF expression were analyzed by RT-qPCR and Western blot. STAT3 phosphorylation was measured by Western blot. Hif1α subcellular localization was analyzed by Immunofluorescence.

RESULTS: Melatonin 1 mM decreased Hif1α mRNA, protein expression and nuclear localization. It was accompanied by reduction of VEGF (both mRNA and protein) under hypoxia. Furthermore, melatonin suppressed hypoxia-
consist in cellular therapy where stem cells are implanted into nanometric scaffolds and grafted onto infarcted ventricles with the hope that cells will contribute to the generation of new myocardial tissue. We propose that this mechanism could be enhanced by the application of a “bioactive implant” onto the pathologic cardiac area. The development of the first prototype was possible by the coordinated action of all research groups of RECATAPI consortium (http://www.recatapi.com), demonstrating the first proof of concept of the main hypothesis of the project. We therefore present here results in a small animal model (mouse) that indicate that the approach suggested is feasible.

Objective: The main aim of this project was the development of a functional bioactive implant to assist or improve regeneration of the infarcted myocardium.

Methods: The methodology used in this work is depicted in the figure below:

An elastomeric microporous membrane scaffold (yellow scaffold in the figure, with mechanical properties similar to cardiac tissue) was filled with a self-assembling peptide nanofiber (a synthetic extracellular matrix analog) and stem cells in order to obtain a bioactive implant. The implant was grafted into injured cardiac tissue to induce stem cell migration into the ischemic tissue with the hope to induce regeneration. Elastomeric porous membranes (yellow in the figure) were prepared by the group of Dr. Manolo Monleón Padrés (Universidad de Valencia), the stem cells were provided by Dr. Antoni Bayes-Genis (Universidad Autónoma de Barcelona) and the self-assembling peptide scaffolds (nanofiber scaffolds) was provided by Dr. Carlos E. Semino (Universidad Ramón Llull, Barcelona).

Results: The bioactive implant was successfully attached to the infarcted area. Loaded stem cells started an active migration towards the host tissue suggesting that it could contribute to induce regeneration, including possible angiogenesis and cardiac tissue neo-formation. During the next months we are planning to follow up the development of a regenerative process, mainly in the contribution of the delivered stem cells to truly functional cardiac tissue.

Conclusions: We present results suggesting that our platform might promote remodeling of necrotic areas of the injured tissue as well as regeneration into functional cardiac tissue. We believe that one-time application of a bioactive implant will have a great impact in cardiac tissue regeneration.

The research leading to these results has received funding from the European Commission Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 229239.

MELATONIN EFFECTS ON PRIMARY RAT HEPATIC STELLATE CELLS ACTIVATION

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Liver fibrosis involves cellular and molecular mechanisms that induce an excessive deposition of extracellular matrix (ECM) which major source are hepatic stellate cells (HSCs). Melatonin has a protective role in various situations of liver damage. The aim of this work was to study the effect of melatonin on HSCs activation in primary culture. HSCs were isolated from Wistar rats by the technique of double perfusion. Cells were cultured in presence or absence of melatonin at different doses (10–1000 μM) and time periods (1–7 days). The expression of the key markers of HSCs activation was measured by RT-PCR. Expression of α-SMA, TGF-β and collagen (I, II and III) was gradually increased in cultured HSCs; however, melatonin was capable of diminishing these values in a concentration and time-dependent manner. Thus, melatonin attenuates HSCs activation in vitro and it could serve as a novel therapeutic target in the treatment of liver fibrosis.
POSTOPERATIVE OOTORRAGIA AFTER LAPAROSCOPIC SURGERY IN TRENDELENBURG POSITION

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Introduction: Laparoscopic surgery provides benefit in postoperative pain, paralytic ileus and lung function. The postoperative otorrhagia after laparoscopic surgery in Trendelenburg position is a strange complication.

Case Report: We report a 58 year old woman with diverticulitis episodes that involved laparoscopic surgery showing sigmoid diverticulitis. The surgery was 270 minutes long, being the patient in Trendelenburg 190 minutes at 45° tilt. The blood pressure and heart rate remained stable during the surgery. After the surgery a bilateral otorrhagia is objectified, showing hemorrhagic bullae on the floor of both ear canals.

Conclusions: The haemodynamic changes associated with the Trendelenburg position involves an increase in central venous pressure, arterial pressure and transcapillary bleeding as well. There are some factors that can make bleeding from the external ear in this extreme position, as the installation of the shoulder pads, the pressure increase in the cephalic vein and abdominal pressure related to neumoperitoneo.

ENDOVASCULAR REPAIR OF COMPLEX ACUTE DISLOCATION ENDOGRAFT

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Abstract: A 78-year-old man presented an episode of acute pancreatitis. He was found to have a common iliac and an internal iliac aneurysms on the left side with a maximal diameter of 5 and 6.5 cm respectively. His past medical history includes obesity and hypertension. He was scheduled to endovascular repair using an aortounilateral device and femoro-femoral by-pass. Two days later he started with severe abdominal pain. Duplex US undergone suggested contrast in the sac. X-ray demonstrated disconnection and distal migration of the branch. Then, extension device is placed with hemural and femoral access to get a join successfully. Patient was discharged three days later with no complications. The endograft disconnection can be detected with simple X-ray. Type III endoleak is potentially dangerous because of the pressure transmitted to the aneurysm sac and require repair.

ABDOMINAL CT ANGIOGRAPHY IN THE PLANNING OF BREAST RECONSTRUCTION WITH DIEP FLAP

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The use of abdominal microvascular flaps allows autologous breast reconstruction, with excellent aesthetic results and low morbidity. 20 breast reconstructions were performed using DIEP flap. Before surgery, abdominal vasculature was studied with 64 multisector-row CT. Patients with allergy to iodinated contrast or renal insufficiency were excluded. Axial, MIP and volumetric CT images were studied. The number of perforating arteries found with a diameter greater than 1 mm were from 2 to 5. In all cases it was possible to locate abdominal perforating arteries with a diameter greater than 1 mm, and select the largest and describe its trajectory. Correlation between surgical anatomy and CT was 100% concordant. Abdominal vascular study by spiral CT is a useful tool in reconstructive surgery, allowing choice the largest perforator vessel to feed the flap, reducing circulatory complications and surgery time.

CLINICAL APPLICATIONS OF AUTOLOGOUS FAT GRAFTING IN BREAST RECONSTRUCTION

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Abstract: The purpose of this series is to review our experience with fat grafting for the correction of breast cancer surgical treatment deformities. A retrospective study of 11 patients with a history of breast cancer that underwent breast fat grafting was conducted. Indication in 4 cases was improvement in contour, shape and volume after conservative surgery. In the remaining 7 patients was used as an adjunct to latissimus dorsi or DIEP flap. Fat harvest technique was performed using a liposuction device with 300 mmHg of pressure and posterior centrifugation. Fat was isolated and infiltrated immediately. Between 120 and 490 cc of fat was transferred in each surgery. Follow-up ranged from 5 to 28 months. Complications occurred in 3 patients, and included fat necrosis and pain. Patients showed satisfaction with treatment and partial or complete corrections were achieved in all cases.

STERNUM HEALING IN SHEEP

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Introduction: Sternum complications after cardiac surgery are a problem in the postoperative period.

Objectives: The aim of our study is to analyze the effect of platelet growth factors on sternum consolidation after sternotomy in ovine animal model.

Methods: We conducted a prospective randomized study in 36 sheep, making a median sternotomy. In 18 of them (control group), we closed the sternum with 3 steel wires. In the rest (18 sheep), we placed autologous plasma between the sternal edges. The lambs were sacrificed between 7 and 30 days duration. Sections of bone were decalcified, fixed in formaldehyde and stained with hematoxylin-eosin.

Results: In the control group, we found large areas of cartilage tissue, whereas in the group treated, we found hematopoietic bone formation.

Conclusions: Platelet growth factors used on the sternal edges after sternotomy promote osteogenesis and sternal consolidation. Growth factors are simple to use and safe, with no adverse effects.

AUTOLOGOUS PLATELET-RICH PLASMA: EFFECT ON HEART ATTACK IN SHEEP

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Title: Myocardial infarction is the most common cause of congestive heart failure.

Objectives: The aim is to assess the effects achieved with the injection of PRGF (plasma rich in growth-factors) in previously infarcted sheep hearts.

Methods: 24 ewes were used, they were surgically infected by left thoracotomy and two coronary arteries were ligated (1st and 2nd diagonal). Three weeks after coronary ligation, sheep were reoperated by median sternotomy. It was injected saline solution in the infarct zone in 6 of them (control group) whereas platelet gel was injected in 15 of them. All sheep were sacrificed 9 weeks later.

Results: In the hearts treated with PRGF, highlights the new vessels in sections of hematoxylin-eosin and factor VIII.

Conclusions: Injection of PRGF in previously infarcted sheep hearts promotes mitogenesis and angiogenesis. The use of PRGF is simple and safe, causing no toxicity or immune-inflammatory reactions.

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ENDOVASCULAR RECONSTRUCTION OF INTRACRANIAL FUSIFORM ANEURYSMS USING A SELF-EXPANDING STENT

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Aim: New intravascular devices enable the treatment of complex intracranial aneurysms. Here we report our experience using the self-expanding stent Leo Plus.

Methods: 24 fusiform aneurysms with different location and clinic were treated. 18 of them only with stent implantation, and the other six with additional coiling. Devices performance and aneurysm occlusion remodeling degree were evaluated using angiography. Complications and clinical outcome were analyzed.

Results: Angiography showed effective remodeling in 83% of all cases, being 80% in the solely treated subgroup. Four transient cerebrovascular complications (16%) and one stent thrombosis (4%) were registered. No new episodes of subarachnoid hemorrhage occurred.

Conclusions: The Leo Plus stent is a flexible device that, in our experience, is useful in intracranial fusiform aneurysms treatment. The use of self-expanding stents alone allows proper endovascular reconstruction of dilated arteries.

SYMPTOMATIC INTRACRANIAL ARTERIAL STENOSIS TREATMENT WITH SELF-EXPANDING NITINOL STENT

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Aim: Patients with recent transient ischemic attack or stroke and severe intracranial arterial stenosis have a 23% annual risk of recurrent stroke in the stenotic artery territory. Feasibility of using self-expanding stent angioplasty for the treatment of these recurrent cases was evaluated.

Methods: 16 patients with severe and symptomatic intracranial arterial stenosis, not responsive to medication, were treated in a span of 6 years. Angioplasty and placement of self-expanding nitinol stent Leo Plus were used.

Results: 100% technical success with no complications achieved during the procedure. One fatal stroke 20 days after middle cerebral artery stenting was registered. 6 months clinical follow-up did not collect further location related stroke episodes. No significant changes were observed in residual stenosis at six and 12 months after stenting.

Conclusions: Here we show that the self-expanding stent Leo Plus is useful for the treatment of severe and symptomatic intracranial arterial stenosis.

ISOLATION AND CULTURE OF FIBROBLASTS ASSOCIATED TO CANCER (CAFs): CO-CULTURE WITH TUMOR CELLS

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Aim: To study the influence of CAFs on proliferation of tumor cells.

Methods: Peritumoral and normal biopsies were obtained from colon cancer and pancreatic ductal adenocarcinoma. Normal and CAFs were isolated and cultured in vitro. Co-culture with colon cancer (CAFs) plays a critical role in tumor cells growth and invasion.

Conclusions: In conclusion, our results show that CAFs have a significant influence on the proliferation of tumor cells, suggesting a potential role of CAFs in tumor progression.

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PRELIMINARY ANALYSIS OF COLLAGEN, TYPE XI, ALPHA 1 (COL11A1), INHIBIN ALPHA (INHBA) AND SECRETED PROTEIN ACIDIC AND RICH IN CYSTEINE (SPARC, OSTEONECTIN) AS POTENTIAL MARKERS OF COLON CANCER

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Background: The gene overexpression of Col11A1, INHBA and SPARC has been considered as prognostic markers in some digestive cancers. There are a few data about their validation at protein level.

Aims: To study the protein expression of Col11A1, INHBA and SPARC in colon cancer, and if they could be considered as potential prognostic markers.

Material and Methods: Retrospective study of two cohorts of operated patients: Group LD, 17 living/nonmetastasis; Group DP, 15 deceased/metastasis. Immunohistochemistry exam was performed -COL11A1 with the antibody generated by us (Int J Oncology 2012, 40:1447–1454)-.

Results: Expression: COL11A1 in 83% of LP, and in 93% of DP; INHBA in 69% of LP, and 62% of DP; SPARC, in all patients. There are no statistical differences LD vs DP.

Conclusions: The overexpression of COL11A1, INHBA and SPARC was demonstrated by immunohistochemistry in colon cancer. However, the overexpression of these proteins are not indicators of poor prognosis.

A NEW MODEL OF ORTHOTOPIC HUMAN PANCREATIC CARCINOMA XENOGRAFT

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Background: Stromal myofibroblasts have been shown to overexpress a variety of collagens that contributes to cancer progression. Tumor response to neoadjuvant therapy ranges widely and is related with outcome. The aim of the study was to determine the correlation between expression of procollagen COL11A1 in diagnostic biopsies and tumour response.

Material And Methods: 102 patients were included. Diagnostic biopsies were assessed with a semiquantitative score for COL11A1 using an antibody developed by our team (Int J Oncology 2012;40:1447–1454). COL11A1 and several clinical and pathological parameters were correlated with T-downstaging and tumor regression grade (TRG) on surgical specimens.

Results: Overexpression of COL11A1 was associated with a better response in relation to T-downstaging (p = 0.03). We found the same trend with TRG but without statistic significance (p = 0.08). We did not find any correlation with clinical and pathological features, excepting histologic grade (p < 0.001).

Conclusions: Expression of COL11A1 is associated with response to neoadjuvant therapy in locally advanced rectal cancer.

ELECTRICAL AND THERMAL PERFORMANCE OF A RADIOFREQUENCY-ASSISTED RESECTION ELECTRODE: COMPUTATIONAL MODELING

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Background: Radiofrequency-assisted resection minimizes intraoperative bleeding and seals the vessels by creating heat coagulative necrosis. The Coolinside device (Apeiron Medical, Valencia, Spain), a cooled electrode provided with a blade, has been previously tested in a clinical stage. Complementarily, the computer modelling can provide detailed information about its electrical and thermal performance.

Method: A three-dimensional model of the Coolinside placed on hepatic tissue was developed to assess the effect of the applied voltage on the coagulation zone.

Results: Heating predominantly occurred in the proximal and distal zones and on the sharp blade. The lesion expanded towards the central zone as voltage increased. The theoretical results are consistent with previous experimental findings and hence suggest that the model could be suitable e.g. to study the effect of radiofrequency power on large vessels near the resection plane.

COMPUTER MODELING OF BIPOLAR RADIOFREQUENCY ABLATION OF VENTRICULAR WALL THROUGH EPICARDIAL APPROACH

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Background: Bipolar radiofrequency ablation using two catheters placed on opposite surfaces of the ventricular free wall (VFV) in both bipolar (BM) and sequential unipolar mode (SUM) has recently been proposed. Although BM has
been shown to create deeper lesions, the effect of factors such as ventricular wall thickness has so far not been examined in detail. Models Two- and three-dimensional theoretical models were used to study temperature distributions and lesion geometry.

**Results:** BM is capable of creating transmural lesions, provided air has not been accidentally introduced into the epicardial space. If air is present, SUM does create transmural lesions at ventricular wall thicknesses of ≤ 7.5 mm.

**Conclusion:** BM is more effective than SUM in achieving transmurality through the ventricular wall, except when the tip of the epicardial catheter is exposed to air.

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**TESTOSTERONE PREDICTION FOR ERECTILE DYSFUNCTION AND HYPOGONADISM**

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**Objective:** The value of testosterone can be obtained only by referring the patient to a higher level of specialization, so it is interesting to create predictive models capable of estimating the value of testosterone from variables easy to obtain in earlier stages

**Methodology:** Uniform sampling of men (40–70 years old) meeting criteria for metabolic syndrome according to ATP-III. Several variables where obtained from them, including the SHIM, IIEF and LISAT-8 questionnaires.

**Results:** 43.5% of patients with metabolic syndrome suffered of erectile dysfunction, whose prevalence increases over age. Linear and Logistic regression models constructed from data obtained in Primary Care consultations successfully predicted the value of testosterone.

**Conclusions:** Accurate regression models can be built by using a few answers to questionnaires and a few clinical parameters easily obtained in Primary Care. This way, it is not necessary to refer patients with erectile dysfunction to urology, and thus generating savings to the healthcare system.

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**STATISTICAL ANALYSIS OF VARIABLES RELATED TO PROSTATIC PATHOLOGIES**

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**Objective:** Search for correlation and/or statistical differences between prostatic diagnosis and a set of independent variables, in order to find out which of such variables can be used as indicators of a prostatic pathology, besides the widely used PSA value.

**Methodology:** Statistical analysis was performed over a sample composed of 103 patients, from whom we obtained a set of variables related to prostate diagnosis. We performed a Z-test for comparison of proportions, and Chi-Square tests for correlation.

**Results:** We found correlation of Diagnosis with PSA and Prostate Volume. 100% of patients with no meat consumption or those with severe symptoms (IPSS > 19) were diagnosed with BPH. The mean value for PSA in patients with Normal Diagnosis is statistically lower than the mean PSA in patients with BPH or Cancer. Having a DRE with nodules or first-degree relatives with PC are strong indicators of PC.

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**A CLASSIFICATION TREE FOR PREDICTION OF PROSTATIC DIAGNOSIS**

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**Objective:** Building a predictive model easy to interpret and which makes it possible to predict, from PC consultations, a prostate diagnosis. The tree should be built by only using variables easy and non-expensive to obtain.

**Methodology:** Working on a sample composed of 103 patients, a C4.5 decision tree was built.

**Results:** Prostate Diagnosis (Normal, BPH or Cancer) is predicted from variables selected by the induction algorithm of the C4.5 tree: Prostate Volume, Prostate Specific Antigen (PSA), Age and Antecedents in Familiar History of prostate cancer. The validation of the tree returns 70% accuracy.

**Conclusions:** Predicting prostate diagnosis before the final decision of the urologist may make it possible to set up a treatment beforehand. Furthermore, if a higher accuracy rate were obtained, it could be even possible to skip the derivation to the specialist itself, thus saving funds to the public health system.

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**MYOCARDIAL ISCHEMIA IN HEART SURGERY INDUCES THE EXPRESSION OF ENZYMES OF THE ANTIOXIDANT DEFENSE SYSTEM AGAINST OXIDATIVE STRESS**

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**Introduction and objective:** Ischemia and reperfusion during heart surgery are accompanied by a series of molecular alterations that have consequences on cardiac function and post-operative evolution. We studied the expression levels of enzymes of the reactive oxygen species detoxification system in the myocardium during induced ischemia.

**Methods:** We analyzed eight patients with severe aortic stenosis undergoing programmed valve replacement. Three myocardial biopsies from the left ventricle were taken: 1) at the commencement of surgery, 2) 20 minutes after aortic clamping and before the second dosage of cardioplegia, and 3) following the second cardioplegia dosage. We determined the expression levels of the mitochondrial superoxide dismutase (MnSOD), catalase and glutathione S-transferase A2 (GSTA2).

**Results and conclusions:** The mRNA expression levels of the antioxidant enzymes MnSOD, catalase and GSTA2 increased significantly in the ischemic myocardium. During induced ischemia, despite the use of cardioplegia, the cellular protection system against oxidative stress is induced.

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**IS THERE A RELATIONSHIP BETWEEN BIOLOGICAL TREATMENT AND BREAST CANCER?**

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**Introduction:** Receptor blocking drugs tumor necrosis factor (TNF-α) are drugs for treatment of rheumatoid arthritis. It is likely that the use of these drugs to lose control on replication and susceptibility to tumor growth.

**Case Report:** We report a 56year old woman with long-standing rheumatoid arthritis treated with Golimumab (TNF-α blocker). She presents microcalcifications in the left breast CSE in a mammography. A biopsy was performed reported as invasive ductal carcinoma. Conservative surgery and BGC was performed and adjuvant radiotherapy and chemotherapy.

**Conclusions:** Patients with rheumatoid arthritis have higher risk of developing malignancies. Risk of malignancy in patients with biological treatment remains
unknown. However, it appears that anti-TNF drugs may cause an increased risk of some tumors. The adverse effects produce during therapy with the different biologic medicines should be controlled. This can be set in a possible future relationship between these biological drugs and the development of neoplasia.

OUTCOMES OF MECHANICAL ENDONASAL DACRYOCYSTORHINOSTOMY

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Background: Nasolacrimal duct obstruction is a common cause of epiphora. Our study assesses the efficacy of Mechanical Endonasal Dacryocystorhinostomosis (ME-DCR) in patients with acquired nasolacrimal duct obstruction.

Methods: A retrospective series of 47 patients undergoing 55 primary ME-DCR between May 2008 and May 2012. Patients included had symptomatic epiphora with anatomical obstruction on syringing. Follow up was assessed subjectively and objectively by anatomical patency.

Results: The procedure was successful in 75% of cases: 68% were classified as functional success (it was defined as relief of symptoms and anatomic success on syringing) while only 7% were considered anatomic success (anatomically patent but symptomatic). Tissues inflammation and hematoma were minimal when the patient had bilateral nasolacrimal obstruction.

Conclusion: ME-DCR is a minimally invasive surgical technique acceptable as alternative to external DCR.

THE ROSS OPERATION IN THE FUTURE: A TISSUE ENGINEERING-SURGERY SYMBIOSIS

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Aortic valve disease is a common diagnosis in cardiac surgical patients. Aortic valve replacement with a pulmonary autograft and right outflow tract reconstruction with a cryopreserved pulmonary homograft (Ross operation) offers good long-term durability in young patients, excellent hemodynamic performance, a unique advantage of valve growth potential of the pulmonary autograft in children and very low rates of long-term valve related complications. However, progressive neoaortic root dilatation and/or pulmonary homograft stenosis induced by adventitial inflammation occur in a proportion of patients and freedom from valve-related reoperation is lower than expected. Some innovative surgical techniques designed to prevent neoaortic root dilatation have been recently described. Moreover, ongoing tissue engineering research can offer effective solutions in the near future for pulmonary homograft degeneration prevention and reoperation rates reduction. Subsequent long-term improvement in valve durability can expand the Ross operation indications and benefits to a majority of patients with severe aortic valve disease.

CORRELATION BETWEEN MORBIDITY IN SURGERY OF RECTAL CANCER AND ITS PREDICTION ACCORDING TO POSSUM, P-POSSUM AND CR-POSSUM SCORES

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Introduction: POSSUM is a common morbidity prediction score, based on several physiological and operative parameters of patients. The objective of the study is to correlate rates of surgical morbidity with predicted, according to the POSSUM score as well as surgical mortality with predicted according to the POSSUM, P-POSSUM and CR-POSSUM scores.

Material And Methods: Data of 59 patients (40 male and 19 female) who underwent rectal cancer surgery between 2009 and 2011 was analysed. Prediction of morbidity and mortality POSSUM, P-POSSUM and CR-POSSUM scores were calculated, and patients were classified according to the percentage of risk calculated in 5 categories: Group I: 0 to 10%, group II: 10 to 20%, group III: 20 to 30%, group IV: 30 to 40% and group V: more than 40%. The calculation of mortality, due to not having any perioperative death in the 2 years of study, has been impossible.

Conclusions: The POSSUM of the Group I and III morbidity score predicts the likelihood of complications in patients more accurately, however the Group II underestimated the probability. Anyway, there is no statistical significance.

EVALUATION OF PREDICTIVE FACTORS OF COMPLICATION AND ITS CORRELATION WITH DIFFERENT TYPES OF COMPLICATION AFTER SURGERY OF RECTAL CANCER

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Introduction: The aim of the study is to know correlation between different factors and different types of complication in our series, primarily based on the parameters used to calculate mortality and morbidity scores POSSUM, P-POSSUM and CR-POSSUM.

Material and methods: Data from 59 patients who underwent surgery for rectal cancer (40 men and 19 women) between 2009 and 2011 was collected. We analysed correlation between data of diagnosis, preoperative and basal status, operative and postoperative factors, histopathology, oncological treatment and follow-up of every patients with categorized medical, surgical, hemorrhagic and anastomosis complications. Chi-square test with a 95% significance level was applied for statistical testing.

Results: There is statistical significance in presence of complications related to duration of surgery (p=0,006), as well as in units transfused postoperatively (p=0,029) and age (p=0,041). 22 of 40 men developed complications, while 5 of 19 women (p=0,019). Of 24 patients older than 70 years, 16 presented complication (p=0,026). There is statistical significance between the medical complications and the anesthetic risk ASA (p=0,028), as well as units of blood transfused postoperatively with surgical complications (p=0,032).

Conclusion: Men had more complications than women. Complications after surgery of rectal cancer increased in relation to age, so older than 70 developed complications more often than other, as expected. The duration of surgery is related with a higher percentage of complications. The transfusion of blood products in postoperative period is associated with an increase in frequency of complications. Increased anesthetic risk is associated with the presence of medical complications after surgery, expected by the very definition of the anesthetic risk.
NEW EXPERIMENTAL MODEL OF ISCHEMIA-REPERFUSION SYNDROME IN LOWER LIMBS

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Background: Although there are many experimental models of limb ischemia-reperfusion syndrome in the literature, to our knowledge there is not a non-invasive, reproducible and quantifiable experimental model in the rat.

Material and methods: We have developed a device consisting on a cord encircling the limb with controlled tension, through a dynamometer. The tension is progressively increased until the ischemia, checked both clinically and through Doppler, is achieved. Twenty WAG rats were subjected to increasing tension on their right limb, on a 0.1 kg basis.

Results: In all the animals, a tension of 0.9 kg achieved absolute limb ischemia.

Conclusions: As surgery for clamping the femoral artery or a tourniquet with uncontrolled tension may lead to an increased rhabdomyolysis and spoil the surgical findings, we expect that our model, being reproducible, quantifiable and minimally invasive, could provide better conditions for the experimental study of the ischemia-reperfusion syndrome in the rat.

IMPLEMENTATION OF THE LAPAROSCOPIC BILIOPANCREATIC DIVERSION

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Introduction: Morbid superobesity, defined as a BMI > 50 kg/m², is an indication of bariatric surgery. The biliopancreatic diversion (BPD) of Scopinaro achieves excellent results compared to the restrictive techniques.

Objectives: We present our initial experience with the laparoscopic BPD technique for super-obese patients.

Methods: 50 super-obese patients were submitted to laparoscopic BPD between 2009 and 2011. Our laparoscopic surgical technique is similar to Scopinaro’s technique performing a Roux-en-Y with an alimentary tract of 300 cm and a common track of 60 cm adding a partial gastrectomy.

Results: All operations were performed by laparoscopy. The median time of the procedures was 92 minutes. Diet was tolerated at the 2nd day and patients were discharged at the 3rd/4th day. Three minor complications were detected: wound port infection, gastrointestinal bleeding with acute pancreatitis and urinary infection. Only one case of anastomotic leak. The morbidity rate was 8% and the mortality rate was 0%.

Conclusions: The laparoscopic BPD in our hospital is a safe surgery for super-obese patients offering comparable results to other series and an acceptable morbidity.

ULTRASOUND AND SCINTIGRAPHY FOR THE PREOPERATIVE DIAGNOSIS OF PRIMARY HYPERPARATHYROIDISM

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Introduction: The combinations of high definition ultrasound and Tc99m-sestamibi-scintigraphy have shown excellent results in the localization of primary hyperparathyroidism. Both exams provide anatomical and physiological information for the surgeon.

Objectives: The aim of this study is to determine the sensitivity and specificity of the preoperative exams for the localization of pathological parathyroid gland in patients with primary hyperparathyroidism.

Methods: A retrospective study has been performed in 186 patients with primary hyperparathyroidism that underwent surgery between January 2005 and December 2011. All patients were preoperatively evaluated with both high definition ultrasound and Tc99m-sestamibi-scintigraphy. The radiological and surgical findings were compared with the histological definitive results.

Results: Of the 186 patients operated, 173 had solitary adenoma, 9 double adenomas and 4 hyperplasia. Of all the adenomas, 135 were diagnosed by ultrasound and 141 by Tc99m-sestamibi-scintigraphy. The combined study showed a sensitivity of 94.5% and a specificity of 94.2%.

Conclusions: This combined preoperative study provides excellent results in the localization of pathological parathyroid gland in patients with primary hyperparathyroidism, increasing significantly the confidence to plan the ideal surgical approach.

DETERMINATION OF THE VENTRICULAR FUNCTIONAL PARAMETERS OF A CLOSED CHEST MYOCARDIAL INFARCTION PORCINE MODEL

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Objective: To determine by cardiac magnetic resonance (CMR), in healthy and animals submitted to a protocol of myocardial infarction (MI), the evolution of left ventricular volumes, mass and ejection fraction (LVEF) during 8 weeks follow-up, using or not markers of replicating cells (BrdU).

Methods: CMR was performed with appropriate sequences to assess these parameters and infarct size at 72 h, 4 and 8 weeks.

Results: In healthy animals there weren’t differences in ventricular functional parameters. In MI group, we observed a significant increase in volumes (telediastolic:460±99 ml/m2), ventricular mass (telediastolic:70±96 gr) and decrease in LVEF (57±42%) at 8 weeks. No differences were seen in animals labelled with BrdU.

Conclusions: In normal growth there were no significant changes in ventricular functional parameters. After provocation of myocardial infarction ventricular remodeling occurs with an increase of volumes and ventricular mass and decrease in LVEF. The BrdU labelling has no influence on these parameters.

INTRAHOSPITALARY MORBIMORTALITY PREDICTION FACTORS IN YOUNG AND MEDIUM AGE PATIENTS OPERATED OF AORTIC VALVE REPLACEMENT BECAUSE OF SEVERE STENOSIS

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Introduction: The severe aortic stenosis is the most frequent valvular pathology and the third cardiovascular disease after arterial hypertension and coronary disease. The aortic valve replacement (AVR) has demonstrated that changes its natural history with excellent long-term results. However, it is an aggressive procedure associated to a not inconsiderable morbimortality. On the other hand, as it is an age related disease, the majority of the works analyse serials of elderly patients. Anyway, the predictors of early mortality and post-surgery complications in a population of young and median age patients keep unknown. Our aim was to know them.

Methods: We analyse all 70 years old patients operated of aortic valve replacement because of severe stenosis from January 2007 to December 2011. A monitoring was made 30 days after surgery, that was fully completed in the 100% of the patients. To know the independent predictors of morbimortality, a multivariable analysis of binominal logistic regression was done, including the model of certain variables considered specially relevant according to a clinic point of view.

Results: 283 patients achieved the criteria of inclusion during the studied period. The medium age was 62 (57–67) years and 101 (37.5%) were women. The variables introduced in the predictive model were: age, sex, chronic lung disease, ventricular dysfunction, severe lung hypertension, emerging surgery, time of extracorporeal circulation, time of aortic pinch, and prostheses–patient mismatch (PMM). Time of CEC (OR = 1.044; p = 0.001), time of aortic pinch (OR = 1.11; p = 0.02) and PMM (OR = 16.43; p = 0.03) behaved as early
mortality independent predictors. Time of CEC (OR = 1.03; p = 0.01), time of aortic pinch (OR = 1.06; p = 0.02), age (OR = 1.12; p = 0.009) and PPM (OR = 6.54; p = 0.043) were risky factors to suffer a bigger complication.

**Conclusions:** Just like in elderly populations, time of CEC and aortic pinch behave as morbimortality independent predictors in the young patient operated of aortic valve replacement by aortic stenosis. On the other hand, PPM seems to acquire a special relevance in this population prognosis.

**MINIMALLY INVASIVE SURGICAL APPROACH FOR LUMBAR SPONDYLOLISTHESIS. MICRONEUDOSCOPIC TRANSFORAMINAL 360º POSTERIOR LUMBAR FUSION**

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Back pain, sciatica and neurological disorders are the most common manifestations of spondylolisthesis. The aim of this study was to assess the efficacy of an endoscopic transfornaminal approach as surgical treatment of lumbar spondylolisthesis. Between 2001–2010 73 patients were operated. The type of spondylolisthesis was isthmic in 24 patients, degenerative in 28 and mixed in 21. 12 cases had spondylolisthesis grade I, 42 cases grade II, and 19 cases grade III. Follow-up was performed at 6, 12, 24 and 48 months. It was achieved a vertebral displacement reduction of one grade or more grades in all patients. Complications included dural tear in 2 patients and two transpedicular screw breakage. The average score of the Oswestry test decreased from 48.3% preoperatively to 16.5% and 14.0% at third and twelfth month respectively. The results were excellent / good in 87.5% of cases.

**NEW POSTERO-LATERAL ENDOSCOPIC APPROACH FOR THORACIC DISC HERNIATION**

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1Complejo Asistencial Universitario de León, Neurocirugía, 2Complejo Asistencial Universitario de León

Thoracic disc herniations represent only the 0.5% of the spinal disc herniations. We describe a modification of the postero-lateral transpedicular endoscopic approach. Between 2007–2012, 12 patients underwent surgery, 7 women and 5 men, aged between 36 and 67 years-old. Thoracic disc herniations were located between T5-T6 and T10-T11 levels. A complete resection of the thoracic disc herniation was achieved in all cases. 3 patients presented intraoperatively significant changes in somatosensory-evoked potentials recordings, beginning steroid protocol for spinal cord injury; they presented a mild monoparesia, recovering normal strength completely 24 hours later. Pain improved significantly in 87% of cases (Oswestry and VAS scales).

The average length of stay was 2.3 days. No patient required postoperative thoracic transpedicular arthrodesis. The endoscopic postero-lateral approach to thoracic disc herniations is a safe approach, and presents as advantages lower morbidity, shorter hospital stay and faster recovery.

**REINFORCING THE HIGH RISK INTESTINAL ANASTOMOSIS: EXPERIMENTAL PILOT STUDY**

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Servicio de Cirugía I, Hospital Clínico San Carlos, Universidad Complutense de Madrid, Madrid, Spain

Anastomotic leaks are a major issue in colorectal surgery. We studied the potential protective effect of a synthetic hydrogel and a fibrin sealant in a porcine model of incompetent intestinal anastomosis. Ten animals had their terminal ileum transected. An hand-sewn end-to-end anastomosis was subsequently fashioned, with a 18French orifice intentionally left in the suture line. Synthetic glue or fibrin sealant were randomly applied to seal the defect. Animals were followed postoperatively and sacrificed on postop day 7.

None of the animals developed either diffuse purulent peritonitis or bowel obstruction. One contained leak reported in each group (20% for each group, NS). Intestinal adhesions were found by 2 animals in each group (40% for each group, NS).

Our findings show that this is a viable model of incompetent anastomosis and that both sealants may be useful by reinforcing high risk anastomosis.

**APPLICATION OF SENTINEL LYMPH NODE IN PAPILLARY THYROID CANCER. PRELIMINARY RESULTS**

A. Exposito Rodríguez, J. Gómez CORTA, M. Paja Fano, A. Ugalde OLANO, B. Barrios Treviño, J. Campo Landero, M. Gutiérrez Muñoz, I. Iturburu Belmonte, A. Gómez Palacios
General Surgery Service. Endocrine Surgery Unit. University Hospital Basurto. Chair of surgery (UPV/EHU)

**Introduction:** Prophylactic lymphadenectomy in papillary thyroid cancer is controversial. Performing the sentinel node technique, might give new indications. We report our methodology and preliminary results.

**Material and Method:** Patients diagnosed of papillary thyroid carcinoma without lymph node. The day before surgery will proceed to the intratumoral injection of tracer guided by ultrasound (4 mCi of 99mTc-nanocolloid, 0.2 ml) and a lymphoscintiography to locate the nodes. During surgery, will locate the sentinel node using a portable gamma probe and for intraoperative study. The series is considered validated if detectability is greater than 95% and there is less than 5% of false negatives.

**Discussion:** According to published studies technique is feasible, reproducible and in 57% of patients could avoid prophylactic lymphadenectomy, even when it is necessary further studies. Our study started in February 2012, including 7 patients (6 women and 1 man) with 100% detection of the sentinel node, one of them (14%) was false negative.

**CERVICAL BENIGN SCHWANNOMA**

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General Surgery Service. Endocrine Surgery Unit. University Hospital Basurto. Chair of Surgery (UPV/EHU)

**Introduction:** Schwannomas are tumors of the peripheral nerves. A 25–45% are asymptomatic head and neck tumors. The treatment is surgical excision. We report a new case.

**Case Report:** 42 year old male with a left supraclavicular tumor 17 years of evolution. The TAC described a tumor of 6.5 cm suspected lipoma and epidermoid tumor, biopsy reported lipoma. After excision and pathologic examination diagnosis was schwannoma. The postoperative passed off without incident.

**Discussion:** The cervical schwannomas are slow growing masses and asymptomatic. Diagnosis is based on clinical, biopsy, CT and / or MRI. The treatment is surgical. The indication for surgery is to relieve pain, or symptoms resulting from the progressive growth. The treatment is based on enucleation from its nerve of origin, trying to preserve their function. Some authors recommend complete resection because partial excision is a permanent loss of function (29%) and transient (43%), the risk of recurrence and malignant transformation of the tumor (4%).

**HAPTIC EXPERT SIMULATORS FOR SURGERY**

C. Fernández Llamas1, J. Gonzalo Órden2, G. Esteban Costales1, V. Matellán Olivera1
1Universidad de León, Ingeniería Mecánica, Informática y Aeronáutica, 2Universidad de León, Medicina y Cirugía Animal

The goal of simulating is to obtain an environment as close as possible to the real scenario. As long as surgery is concerned, the sense of touch is crucial and haptic technology is the key because haptics bring touch into a computer simulation. But simulators can be used not only for recreating reality, but also as a teaching-learning tool. This work is aimed at building haptic simulators including expert knowledge for teaching surgery.
In the first phase, the expert knowledge about a particular surgery is described following a diagram suitable for being directly translated into the simulators building system. In the second phase, that diagram is used to configure and build a new haptic simulator. The key part of the process is that the architecture of the system eases the development of the haptic simulators reducing the time needed to put them to work.

GIANT HEPATIC HYDATID CYST WITH EXTRA-ABDOMINAL EXTENSION

Hospital Universitario Central de Asturias. Oviedo.

Introduction: Echinococcosis is caused by Echinococcus granulosus. The liver is the location most common.

Case report: A 60-years-old male presented with epigastric discomfort, jaundice, and acholic stools. Laboratory values: AST 57 IU/L, ALT 172 IU/L, GGT 564 IU/L, ALP 272 IU/L, total bilirubin 8.1 mg/dl, direct bilirubin 5.7 mg/dl. CT scan showed a 20x10x12cm cystic mass in the left hepatic lobe compressing the inferior vena cava and extending into the mediastinum, displacing aorta, esophagus and right atrium. Through a laparotomy and after sterilization of the cystic with hypertonic saline, a partial pericystectomy with drainage was performed. The postoperative outcome was favourable. After discharge Albendazole was continued.

Discussion: Giant hydatid cysts are rare and show clear symptoms when they exceed 10 cm. The diagnostic methods of choice are ultrasound and CT scan. The standard treatment is surgical (i.e., pericystectomy, liver resection, marsupialization). Chemotherapy combined with surgery is effective for prophylaxis of complications and recurrences.

URGENT THORACIC ENDOPROTHEsis ON ACUTE AORTIC SYNDROME ABERRRANT SUBCLAVIAN ARTERY

Complejo Asistencial Universitario de León

In acute aortic syndrome endovascular treatment offers excellent results in high-risk patients with co-morbidities. The association with aberrant subclavian artery is outstanding and adds a challenge to the treatment of these patients. We report the case of a 65 year old woman, complicated with a large penetrating ulcer in zone III of the aortic arch with intramural hematoma and anomalous departure of aberrant right subclavian or arteria lusoria, found by computed tomography scan that was treated by thoracic aortic stenting.

LIVER HYPERthermia INDUCED BY DIFFERENT IRON MAGNETIC NANOPIRICALS “EX Vivo” AND CORRELATION TO PATHOLOGICAL DAMAGE IN THE TISSUE

1Dpt. of Radiology (Galdakao-Uixostu Hospital), 2Laboratory of Experimental Surgery University of The Basque Country, 3Dpt. of Surgery (Crues University Hospital), 4Faculty of Sciences & Technology (University of The Basque Country), 5Dpt. of Pathology (Galdakao-Uixostu Hospital)

Magnetic nanoparticles exposed to alternating magnetic fields, are capable to induce tissue necrosis by means of hyperthermia. Methods were found to be suitable for being translated into the simulators building system. In the second phase, that diagram is used to configure and build a new haptic simulator. The key part of the process is that the architecture of the system eases the development of the haptic simulators reducing the time needed to put them to work.

Results: HFN increased liver temperature proportionally to the amount of nanoparticles infused (1.75 mg: 4°C; 10 mg: 14°C). In the liver sections from LFN-infused rats iron aggregates were found into the vessels, while with HFN, non-aggregated iron nanoparticles were found within the liver sinusoids.

Conclusion: HFN placed inside the liver may induce significant local hyperthermia.

Clinical cases: Female, 68 years, three-year history of hepatic resection of NET of SI originate in the enterochromaffin cells of the Lieberkuhn crypts. They appear frequently in the distal ileum. They require surgical treatment, performing resection of the maximum tumour mass, which prolongs survival.

References:
Hospital de Basurto
Introduction: The neuroendocrine tumours (NET) of small intestine (SI) represent 30% of the neoplasias of SI. Its diagnosis is late and the majority present lymphatic involvement or hepatic metastasis in the diagnosis. We present a case that debuted as single hepatic metastasis of unknown primary tumour.

Clinical cases: Female, 68 years, three-year history of hepatic resection of NET metastasis, without evidencing primary tumour. She went to the Emergency for abdominal pain and vomiting. The CT revealed a 2.5-cm tumour in ileal mesentery invading the SI and causing intestinal obstruction. Resection of 30 cm of the ileum and laparoscopic lateral-lateral anastomosis. The pathological anatomy reported the neuroendocrine tumour GTF3N1.

Discussion: The NET of SI originate in the enterochromaffin cells of the Lieberkuhn crypts. They appear frequently in the distal ileum. They require surgical treatment, performing resection of the maximum tumour mass, which prolongs survival.

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I. Garzo García, M. Franco Benito, B. Martín Escuer, R. López Mancilla

Introduction: Superior limbic keratoconjunctivitis (SLK) is an uncommon entity characterised by inflammation of the superior palpebral and bulbar conjunctive, keratinisation of the superior limbus and corneal and conjunctival filaments. It may be associated with other diseases, however its precise etiology is unknown. Among the suggested hypothesis the mechanical theory seems to be the most attractive.

Case Report: A 78 year old woman asymmetrically affected by SLK received medical treatment (artificial tears, topical corticosteroids and autologous serum) without success. We decided to resect the superior bulbar conjunctiva and the underlying Tenon’s capsule in her most affected eye. An additional amniotic membrane graft was implanted in the resected area. One year after the surgical procedure the patient was asymptomatic.

Conclusions: Conjunctival resection with amniotic membrane graft could be a safe and effective surgical procedure in SLK refractory to medical treatment.

Surgical treatment for refractory superior limbic keratoconjunctivitis

I. Garzo García, M. Franco Benito, B. Martín Escuer, R. López Mancilla

Introduction: Superior limbic keratoconjunctivitis is an uncommon entity characterised by inflammation of the superior palpebral and bulbar conjunctive, keratinisation of the superior limbus and corneal and conjunctival filaments. It may be associated with other diseases, however its precise etiology is unknown. Among the suggested hypothesis the mechanical theory seems to be the most attractive.

Objectives: To assess the clinical outcomes of surgical treatment in refractory cases of superior limbic keratoconjunctivitis.

Methods: Since 2008, 43 consecutive patients were referred to the eye clinic of the Hospital San Agustín for the treatment of superior limbic keratoconjunctivitis. Surgical treatment included conjunctival resection with amniotic membrane graft in all cases. Clinical outcomes were assessed by slit lamp examination and documentation of the surgical procedure.

Results: The mean follow-up period was 18 months (range 3-42 months). The mean number of surgical sessions per patient was 2.2 (range 1-5 sessions). The final postoperative result showed significant improvement in ocular comfort and visual function in all cases. No complications were observed during the follow-up period.

Conclusions: Conjunctival resection with amniotic membrane graft is an effective and safe surgical treatment for refractory superior limbic keratoconjunctivitis.
identification of the non-modifier factors, inherent to the patient, which have any influence on the complications in rectal cancer surgery.

**Material and methods:** We analyze the factors related to the complications in our series of 66 patients operated on rectal cancer between January 2009 and January 2012, studying wound and anastomotic complications and other surgical and medical complications. We applied non-parametric trials and a Pearson coefficient (signification level 95%).

**Results and conclusions:** There were 19 patients with wound complications (28.8%), 4 with anastomotic complications (6.1%), other surgical ones in 14 (21.2%) and medical in 3 (4.5%). The correlation studies show statistically significant relations between: wound complications with sex, surgical time and area; other surgical complications with surgical intentionality and proteins; Medical complications with ASA risk and potassium.

**SPONTANEOUS PUNCTURE BILIARY TRACT: CONSERVATIVE MANAGEMENT**


**Hospital Universitario Lucus Augusti (Lugo), Cirugía General Aparato Digestivo**

**Introduction:** Most bile duct perforations are due to surgical damage. Spontaneous perforation is an uncommon condition presented in adults. **Method:** The case of a 92 year-old woman is reported. Enters hosp. ER with a three-day issue of abdominal pain and vomit. The axial Tomography reveals blockage of the bile duct 2° to papillary stenosis and cholelithiasis with spontaneous perforation of bile duct, perihpatic bilioma and peritoneal supramesoecical space. **Results:** Conservative treatment starts with intestinal rest, serotherapy and antibiotic therapy. In the following days, a percutaneous drainage and a retrograde cholangiopancreatography are performed. Patient is discharged 14 days after positive development, remaining without symptoms to date. **Conclusions:** In this disease treatment, surgery is usually performed. Nevertheless, there are certain situations in which a more conservative attitude can mean a more successful alternative in the treatment of this issue.

**ANALYSIS OF THE PROLIFERATIVE CAPACITY OF MESENCHYMAL STEM CELLS CULTURED ON BONE ALLOGRAFT FRAGMENTS BY ALAMAR BLUE TECHNIQUE. EXPERIMENTAL STUDY**

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1 Establecimientos de Tejido Fundación Clínica San Francisco, 2Complejo Asistencial Universitario de León, Cirugía Ortopédica y Traumatología

**Introduction:** There remain many unanswered questions surrounding the use of tissue engineering techniques, so it is essential to develop in vitro studies to analyze specific cell behavior before applying them in human therapy. **Objectives:** The objective of this study was to compare the proliferative capacity of adipose-derived mesenchymal stem cells on different types of bone allograft using Alamar Blue technique. **Method:** Mesenchymal stem cells were isolated from adipose tissue, expanded prior to their combination with the allograft, yielding similar growth patterns. Although no statistical differences were observed, cell proliferation was higher when cells were cultured on frozen allograft. **Results:** Proliferation was studied during 5 weeks by the Alamar Blue technique, which allows cell quantification maintaining their viability. **Conclusions:** Alamar Blue technique can be used to analyze the biocompatibility of bone substitutes prior to apply tissue engineering techniques to the field of Human Orthopaedic Surgery.

**SPECIFIC PROTOCOL FOR POST-TONSILLECTOMY PAIN CONTROL IN ADULTS OPERATED IN OUTDOOR SURGERY (OS)**

M. L. Magdalena Díaz, L. Caragal Urgellés, A. Solé Magdalena

**Hospital Universitario Central de Asturias**

**Introduction:** Morbility associated to tonsillectomy and specially pain is still an important clinical problem. **Objectives:** Evaluate the influence of a specific protocol for postoperative pain control and complications in adult tonsillectomized patients. **Method:** Observational prospective study. Patients: tonsillectomized adults with general anaesthesia in OS, in the Hospital Universitario Central de Asturias, January 2008 – December 2010. Two groups: I, 65 patients with variable analgesic treatments; II, 50 patients with an analgesic protocol. Surgery: cold (CS) or electrical (ES). A control sheet was designed to register the evaluated variables: pain (Numeric Scale from 0 to 10-NS), visit to emergency service (ES), etc. on the 4th, 7th and 15th day. **Results:** On the 4th I vs II: NS 4,8 vs 3, P = 0,0002; ES 36% vs 16%, P = 0,02. NS CS vs ES: 3,7 vs 4,4. **Conclusions:** A specific protocol in outdoor tonsillectomized adult patients is useful to achieve less pain and complications.

**PERIPARTUM HYSTERECTOMY IN LEÓN HOSPITAL**

F. Manrique, C. Gutiérrez, L. Padilla, J.C. Naveiro

**Hospital Universitario de León, Servicio de Obstetricia y Ginecología**

**Objective:** To estimate the incidence, indications and the medical and surgical complications of peripartum hysterectomy (HP). **Methods:** Retrospective and descriptive study of HP from the year between 2000 and 2012. Medical records were reviewed; the indication and the complications were obtained. **Results:** 16 HP were performed and the incidence was of 0,6 in 1000. The uterine atony was the leading cause, 56%, abnormal placentation in 25%. The leading medical complication was the hipovolemic shock. The surgical complications in Table 1. **Conclusion:** The incidence of HP 0,6 in 1000. The uterine atony is the primary indication. The hipovolemic shock and transfusions are the most common complications.

**ADRENAL ADENOMA AS A CAUSE OF POORLY CONTROLLED ARTERIAL HYPERTENSION**


**Complejo asistencial universitario de león.**

**Introduction:** Primary hyperaldosteronism (Conn 1954), is a cause of arterial hypertension due to an aldosterone’s overproduction by the adrenal gland, with prevalence lower than 1%. It is characterized by moderate or severe hypertension, difficult to control and secondary symptoms to hypokalemia. The diagnosis is carried out using determinations of biochemical aldosterone and renin, CT and MRI being used for the localization diagnosis.

**Table 1 Surgical Complications**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfusions</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>Exploratory Laparotomy</td>
<td>7</td>
<td>43,7</td>
</tr>
<tr>
<td>Postoperative Fever</td>
<td>5</td>
<td>31,2</td>
</tr>
<tr>
<td>Oophorectomy</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Ileus</td>
<td>3</td>
<td>18,7</td>
</tr>
<tr>
<td>Cuff abscess</td>
<td>2</td>
<td>12,5</td>
</tr>
<tr>
<td>Wound Dehiscence</td>
<td>1</td>
<td>6,2</td>
</tr>
</tbody>
</table>
Clinical Case: A 57 years old man, hypertension of 10 years’ standing, poorly controlled with medical treatment. It shows in RM suggestive injury of adrenal adenoma. Laparoscopic adrenalectomy is carried out achieving good blood pressure control after surgery.

Conclusions: Hyperaldosteronism is the most prevalent form of secondary arterial hypertension. Surgery is indicated in all patients with proven unilateral involvement, i.e. in confirmed adenomas and carcinomas. Subtotal adrenalectomy is generally not recommended due to the risk of persistence or recurrence.

GIANT RETROPERITONEAL LIPOSARCOMA
Complejo asistencial universitario de León.

Introduction: Liposarcoma is the most common retroperitoneal tumor. Its clinical is nonspecific giving symptoms in advanced stages due to their slow growth, being the most commonly symptom an increased of abdominal girth with diffuse abdominal pain, which delays the diagnosis. The diagnostic tests used are the CT and immunohistochemistry (S-100 protein, desmin, CD34 and keratins).

Clinical Case: A 63 years old man with abdominal pain and mass of 22 cm in CT from left hypochondrium to left iliac fossa. Tumor excision is carried out, being the informed pathology anatomy of dedifferentiated retroperitoneal liposarcoma.

Conclusions: The choice of treatment is the complete tumor’s excision including pseudocapsule and affected organs, as it has a high rate of local recurrence. If removal is not complete, it will take up with CT and MRI. The complete resection and the histological grade are the most important prognostic factors.

OVARIAN THECOMA. PRESENTATION OF CLINICAL CASE
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Hospital Virgen Macarena, Cirugía General y del Aparato Digestivo

Abstract: We report the case of a patient diagnosed with a pelvic mass, which is subjected to exploratory laparoscopy, objectifying injury 16 cm, solid consistency and whitish, under the left ovary. Resection is performed, left adnexectomy and specimen removal through Pfannenstiel incision, without incident. The diagnosis of ovarian thecoma is reached in the anatomical-pathological study. The thecomas are benign ovarian tumours very infrequently (1%), which may relapse in 30% of cases, originating from the cells of the theca interna, affecting peri-menopausal women. His diagnosis is usually incidental since they don’t present clinical feature. They are solid unilaterial tumors, variable volume (5–10 cm), encapsulated, smooth surface and potentially hormonocretores. The definitive diagnosis is histological, as fusiform cells that have a fibrous appearance.

EXPERIENCE IN RECTOVAGINAL FISTULAS TREATMENT
Unidad de Cirugía Colorectal. UGC Cirugía General y A. Digestivo. Hospital Universitario Virgen Macarena, Sevilla

Introduction: The rectovaginal fistulas allow the rectal content to pass to the vagina. Its prevalence is about 5 to 9%, with a variety of etiologies, surgical techniques and results.

Material And Methods: We present 6 cases of rectovaginal fistulas operated between 2009 and 2011: patients with rectal cancer advanced sigmoid tumor and Crohn’s disease had ostomies done and patients with iatrogenic underwent transanal procedures (fistulectomy, levatorplasty, sphincterorraphy, fibrin glue).

Results: Two of the transanal operations required a second transanal approach (rectal flap), both with no symptoms 8 and 13 months after surgery. The two ileostomies are to be reverted and the patient with cancer died after 3 weeks because of her neoplasm.

Conclusions: Ostomies were chosen for cancer and inflammatory bowel disease and the transanal approach was chosen for iatrogenic, with a high reintervention rate and better results after reintervention.

RUPTURED ABDOMINAL AORTIC MYCOTIC ANEURYSM. ENDOVASCULAR TREATMENT
Vascular Surgery Service Complejo Asistencial Universitario de León

Mycotic aortic aneurysm caused by an arterial wall infection has very low incidence but it is potentially lethal. Currently it appears in arteriosclerosis patients. Diagnosis should be based on clinical suspicion supported by imaging techniques. A 72-year-old man with hypertension, atrial fibrillation antiagulated, prostatism, and obesity. The patient was hospitalized with a picture of undulant fever and positive blood culture for Brucella. He was sent urgently, after performing a TC angiography, and discover an abdominal periaortic hematoma with active bleedin. After diagnosing an aortic rupture mycotic etiology, an emergency surgery was performed including aortoiliac stenting, contralateral iliac occluder and femorofemoral crossover graft. Another TAC angiography was performed, as post surgery control. It confirmed complete exclusion of aortic rupture. Aortic rupture mycotic aneurysm is a rare, serious and requires urgent action. Endovascular treatment has proved to be, in our case, an effective solution backed by intensive intravenous antibiotic treatment.

RETROPERITONEAL LYMPHANGIOLIPOMA. A RARE TUMOR
M. Muñelo Lorenzo1, A. M. González Ganso2, L. Muñoz Ruano1, V. Simó Fernández2, L. Dorado Castro1, F. Arija Val1
1Department of General Surgery. University Hospital Lucus Augusti, Lugo, Spain, 2Department of General Surgery. University Hospital León, León, Spain.

Introduction: Lymphangiolioma is an uncommon tumor reported in 1974 for the first time. A 54-year-old woman is referred to our department with sympesia for about two months, with nausea and abdominal discomfort. No jaundice or acolia.

Method: Radionuclide scanning and cholangiography show a mass located in the middle of the duodenum, pancreas head, posterior segment of the liver right lobe and right colon, located in the retroperitoneal space. Endoscopic ultrasound and biopsy reveal a polylolate cystic lesion compatible with cystic retroperitoneal lymphangioma.

Results: We perform a wide excision of the polylolate h lampatous lesion, covering the 2nd portion of the duodenum, pancreas head-body and choledoco. Anatomical pathology reveals a benign tumor made up of lymphatic spaces surrounded by mature adipose tissue, compatible with lymphangiolioma.

Conclusions: Lymphangiolioma, a rare benign tumor made by two components: lymphangioma and lipoma. Treatment consists of surgical resection of the injury.

SIGMOID VOLVULUS. LAPAROSCOPIC SIGMOIDECTOMY
M. Muñelo Lorenzo1, V. Simó Fernández2, L. Muñoz Ruano1, S. Santacruza Pérez1, M. Diago Santamaria2
1Hospital Universitario Lucus Augusti, servicio de cirugía general y del apto digestivo, 2Complejo Asistencial Universitario de León, servicio de cirugía general y del apto digestivo.

Objectives: The colon volvulus is an abnormal twisting of colon around the mesenteric vessels, representing 5 to 8% of all causes of intestinal obstruction.
The laparoscopic approach for the treatment of sigmoid volvulus has been a rare surgical indication.

**Methods and material:** A 75-year-old male with known dolichomegacolon and three episodes of volvulus and sigmoid colonoscopic decompression in 15 days.

**Results:** The redundant sigmoid colon was totally mobilized by a laparoscopic medial-to-lateral dissection sequence, after which it was exteriorized, transected, and reconstructed by end-to-end anastomosis. The pathology revealed “no evidence tumor specific inflammation.”

**Conclusions:** Considering that patients with sigmoid volvulus often are elderly and chronically ill, laparoscopic elective surgery after a successful colonoscopic decompression may be a good choice for a selected group of patients in terms of minimized surgical complications and quick convalescence.

**MALIGNANT FIBROUS HISTIOCYTOMA OF THE MESENTERY: A CASE REPORT**

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1Servicio de Cirugía General del Hospital Universitario Lucus Augusti, Lugo, 2Servicio de Radiología del Hospital Universitario Lucus Augusti, Lugo

**Background:** Malignant fibrous histiocytoma (MFH) is a very aggressive sarcoma with high metastatic potential. We report a rare case of a primary abdominal MFH originating from the mesentery.

**Case report:** A 62-year-old male presented with abdominal pain and touchable tumor in left hemi-abdomen. Abdominal ultrasound shows the mass as “pseudo-kidney image” and the computed tomography as a polylobate tumor with areas of central necrosis. We find intraoperatively a big tumor (19 × 16 × 12 cm) depending on the mesentery and affecting a jejunum portion. We do block resection. Macroscopic rests remain attached to the superior mesenteric vein. The tumor was histologically classified as a myxoid malignant fibrous histiocytoma of the mesentery. The patient received adjuvant chemotherapeutic treatment.

**Conclusion:** MFH is a rare tumor. Due to its silent character, its diagnosis is late and the prognosis is poor. Surgical resection is the treatment chosen. The role of adjuvant chemotherapy and irradiation still remains controversial.

**EVALUATION OF ANTIBIOTICS USAGE IN GENERAL SURGERY AFTER MODIFICATIONS IN THE FORMULARY COMPOSITION**


Servicio de Farmacia, Complejo Asistencial Universitario de León

**Introduction:** Ertapenem was included in our hospital’s formulary (2007) in order to optimise other carbapenems consumption and minimise antibiotic selection pressure over *Pseudomonas*.

**Objectives:** To analyse in-hospital antibiotic consumption (ABC) and its trend in general surgery (GS)(900 beds), after ertapenem inclusion.

**Method:** Descriptive retrospective analysis(2006–2011) of the ABC in GS (1,100-bed tertiary care teaching hospital). Data on the use of antibiotics were expressed as defined daily doses per 100-bed-days(DDD/100bed-days).

**Results:** Overall ABC was high (Mean = 69.97 ± 3.98DDD/100bed-days). The most frequently used antibiotics were penicillins(M = 37.58 ± 2.27), followed by metronidazole(M = 13.52 ± 2.14) and carbapenems (M = 8.69% ± 4.65).

**Conclusion:** It seems, that ertapenem had displaced the use of tobramycin-metronidazole for intra-abdominal infection and had not minimised the use...
of carbapenems nor piperacillin-tazobactam. Other variables may explain those consumption trends, so more exhaustive studies may be done.

**INTERMITTENT SUBLETHAL ISCHEMIA ALTERS EPITHELIAL BARRIER FUNCTION IN A MODEL OF PORCINE SMALL BOWEL TRANSPLANTATION**

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Sección de Cirugía Colorrectal, Servicio de Cirugía I. Hospital Clínico San Carlos, Madrid

The aim of this study was to investigate the early functional effects of intestinal ischemic preconditioning (PC) on porcine ileal mucoa.

Two contiguous segments of porcine small intestine proximal to the ileocecal valve were isolated. A 20-cm segment was preconditioned by intermittent clamping of the mesentery whereas the other served as control. Preconditioning did not alter either baseline electrical barrier properties (TER: 78 ± 5.1 vs 72.9 ± 8.2; n = 13, NS) or baseline currents (Isc: 30.9 ± 2.9 vs. 39.5 ± 7.5; n = 15,NS). Nucleotide-activated currents (peak Isc: 47.7 ± 3.4 vs 41.9 ± 2.5) or Ca2+ -stimulated secretion (peak Isc: 5.3 ± 2.6 vs 6.2 ± 2.7) were not affected either. However, paracellular permeability assessed by FITC (Fluorescein at 30 min: 222 ± 61.7 counts vs. 65.3 ± 23.0 counts; n = 6 p = 0.038), was transiently increased. No morphological differences was observed. Intestinal PC does not alter either baseline or stimulated secretion but causes an early increase in permeability in porcine ileal mucosa.

**TITANIUM MESH IN RECONSTRUCTIVE SURGERY OF THE NASAL PYRAMID. FOLLOW-UP OF OUR 11 FIRST CASES**


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We conducted a retrospective review of our first eleven patients who had had a nasal reconstruction with titanium mesh. All of them had localized skin tumors in the nasal pyramid. There have been no mesh extrusions or infections in any of our patients with a mean follow-up of 4 years. The results of our series of patients corroborate the suitability of this material in the repair of osteochondral defects of nasal structures as well as its low complication rate.

**EFFECTIVENESS OF MOHS MICROGRAPHIC SURGERY IN THE DERMATOFIBROSARCOMA PROTOPERUBANS TREATMENT**

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**Introduction:** Mohs Micrographic Surgery (MMS), is the best therapeutics option in the dermatofibrosarcoma protuberans (DFSP) due to the locally infiltrating growth.

**Objective:** Value the effectiveness of CMM.

**Material and methods:** Retrospective study of removed DFSP in our shift, in the last ten years, proving the diagnosis through fresh staining with macrosides.

**Results:** The average age was 43.6 years old; the tumor average size was 3.7 cm; the average of CMM pass was 2.4; 13 were primary tumors and y 2 recurrence. After a monitoring average of de 4.2 years, neither of the patients showed recurrence.

**Discussion:** We confirm the advantages and effectiveness of fresh CMM and using macrosides, validated by the studies, which compare the recurrence of DFSP with a wide local excision (7-20%), against CMM (1-3%).

**Conclusion:** The CMM is the treatment of choice in DFSP, by the smallest rate of recurrence and the best aesthetics results.

**TECHNICAL INFILTRATION- INFUSION OF HEMATOPOIETIC STEM CELLS IN PRESSURE ULCER OF SPINAL CORD INJURED**

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**Introduction:** The spinal cord injured predisposed to suffer pressure ulcers. An 85% will develop throughout his life with recurrence rates elevated.

**Objective:** Evaluate the clinical healing in ulcers of spinal cord injured patients.

**Methods:** An observational, prospective study is made in 10 patients with ulcers located in the pelvic area. The technique consists of refreshing the cutaneous edges, direct closing and infusion/ infiltration with mononuclear hematopoietic stem cells.

**Results:** After 6 months, in 24 patients healing existed, in two persisted a small dehiscence, in three failed from the beginning and one was discarded of the series. The times of nurse and the post-operating average descended in relation to the conventional techniques.

**Conclusions:** The cellular therapy with mononuclear autologous stem cells of bony marrow constitutes a reality nowadays. The obtained results, absence of complications, ethical problems, security, not toxicity and immunoreactivity, makes it to be a good alternative to the conventional techniques.

**Key words:** Infusion intralesional. Stem cells. Pressure sores.

**USE OF TRANSDERMAL FENTANYL IN A PORCINE MODEL OF LEFT PNEUMOEDEMA UNDERGOING UNIPULMONAR ANAESTHESIA**

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**Introduction:** The main complication during unipulmonar ventilation for pneumonectomy is hypoxia. Using an adequate analgesic protocol allows decreasing the dose of anaesthetic gas, achieving a higher PaO2 and better hemodynamic values of the patient.

**Objectives:** To assess the hemodynamic stability of the patient and the incidence of hypoxemia in a pig model of left pneumonectomy.

**Material And Methods:** A fentanyl patch was applied 24 hours before the surgical intervention in 35 pigs. Midazolam and ketamine were used as preanaesthetic medication, inducting agent was propofol and inhalatory anaestheti was isoflurane.

**Results:** Monitored parameters remained within physiological values during the procedure, no episodes of hypoxemia were observed. No pig died during or after the procedure.

**Conclusion:** The use of adequate mechanical ventilation, transdermal fentanyl with a low level of isoflurane, and alveolar recruitment manoeuvres with moderate Positive End Expiratory Pressure (PEEP) values allows controlling the incidence of hypoxemia during unipulmonar ventilation.

**TISSUE-ENGINEERED CARTILAGE REPAIR IN AN EXPERIMENTAL MODEL**

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**Objectives:** To prove the usefulness of a new scaffold in producing tissue engineered auricular cartilage
Structure: A new scaffold was produced by denaturalizing blood globular proteins by addition of glutaraldehyde and the biofiltration of the result

Cells: Chondrocytes were obtained by enzymatic digestion from auricular cartilage biopsies of rabbits. Cells were cultured in single-layer, then seeded and differentiated in scaffolds. Some cultures were marked with GFP for posterior identification

Transplantation: Chondrocyte-seeded scaffolds were transplanted autologously into experimental defects in rabbit’s ears.

Results: Repair of defects was achieved in those with chondrocyte seeded scaffolds. Cells that repaired defects were stained with antiGFP IgG. Those with acellular scaffolds were filled with connective tissue.

Conclusion: It is possible to repair cartilage defects by means of tissue engineering using the new scaffold

RECOVERY OF THE FOOT DORSIFLEXION AFTER PERONEAL NERVE INJURY USING NERVE REPAIR TECHNIQUES AND TENDON TRANSFERS. ACTION PROTOCOL AND CLINICAL AND FUNCTIONAL RESULTS

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The common peroneal nerve presents two main characteristics: it is the most frequently nerve injured in the lower extremity and the nerve with worse functional outcome after nerve repair. Peroneal nerve lesions produce failure of dorsiflexion and eversion of the foot, leading to a limitation for walking. Even in cases where nerve function recovery is considered acceptable, patients may have a significant functional limitation that affects their quality of life. We present our experience managing peroneal nerve injuries and our current protocol, based on the reparative techniques (neurolysis and nerve grafting) and tendon transposition techniques that are used to achieve the best functional outcome and to improve the quality of life of these patients. The parameters analyzed in our retrospective clinical serie were: degree of muscle strength, tenderness, pain, functional status and patient satisfaction. Functional outcomes were assessed with the scale of Stanmore.

ATYPICAL LOCATION OF BOERHAAVE’S SYNDROME


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Introduction: Boerhaave’s Syndrome is an esophageal rupture due to an increased intraluminal pressure during vomiting in the absence of upper esophageal sphincter relaxation. The most common location is in the left side wall of the distal esophagus.

Case report: A 70-years-old man presented epigastric pain and dyspnea after sudden vomiting, with hypotension associated. CT scan showed a perforation in the right posterior wall of the lower esophagus and hydro pneumothorax. A primary suture of the perforation was performed. During postoperative period, the patient developed esophageal suture dehiscence, it was resolved with placement of two coated stents.

Discussion: The presence of retrosternal pain and subcutaneous emphysema after episode of vomiting is a set of symptoms suggestive of this disease. CT with contrast is the diagnostic test of choice. Aggressive treatment of the perforation by direct suture appears to be the most effective, as well as its combination with endoscopic techniques increase success rates.

EVALUATION OF LAPAROSCOPIC APPENDECTOMY VS. OPEN APPENDECTOMY: A RETROSPECTIVE STUDY AT LA PAZ UNIVERSITY HOSPITAL, MADRID, SPAIN

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The aim of this study was to evaluate laparoscopic versus open appendectomy for the treatment of acute appendicitis in our department.

From January 2002 to December 2011, 754 patients were clinically and/or radiologically diagnosed with acute appendicitis. 316 underwent a laparoscopic appendectomy (LA) and 418 underwent an open surgical procedure (OA). For comparison, 150 patients from each group were randomly selected. There was no significant difference in age, sex, lag time between the onset of symptoms and diagnosis, age-related comorbidities and anatomopathologic findings between the two groups.

In LA group, overall postoperative morbidity was 16.0%, mortality 0.0% and mean hospital stay 4.1 days compared with 26.7%, 3.0% and 7.5 days respectively, in OA group.

Postoperative complications (p = 0.031) and mortality (p = 0.060) were significantly less in the laparoscopic surgery group, and mean hospital stay was shorter. Therefore, laparoscopic appendectomy shows benefits for both the patient and the NHS.

VALIDATION OF AN OSTEOPOROTIC SHEEP MODEL USING DXA AND BONE HISTOMORPHOMETRY

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Introduction: Although a large variety of animal models have been used in osteoporotic research, sheeps are a promising model.

Objectives: To validate an osteoporotic sheep model using DXA and bone histomorphometry

Material and methods: Ten mature female Spanish Churra sheeps were used in this study. Animals were divided in two groups. First group (n = 5) underwent bilateral ovarietomy, received a weekly intramuscular injection of dexamethasone and was fed with a low Ca and Vit D diet. The second group (n = 5) served as control group. DXA measurements of the femoral necks and lumbar vertebral bodies were performed at the beginning of the study and six months later. A special positioning system was developed to allow an optimal exposition of the femoral neck area. All animals were euthanized and bone samples were collected to perform histomorphometric studies.

Results: DXA and histomorphometric values demonstrated the osteoporotic condition of the first group.

Conclusions: DXA and histomorphometry were useful to validate this osteoporotic sheep model.

METFORMIN EFFECTS ON HUMAN COLONIC CANCER CELL LINES

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Background: Metformin is an oral antidiabetic drug. Its interest has increased since few clinic and preclinical trials seem to demonstrate lower cancer incidence and higher survival in metformin type II diabetes treated patients. Moreover, diabetic colon cancer patients on this drug have lower mortality rates.
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**Purpose:** Observation of metformin effect on colonic cancer cell line colo205 in vitro.

**Methods:** Cell line colo205 cultured with different metformin concentrations: 20 mmol/L, 10 mmol/L, 5 mmol/L, 2.5 mmol/L, 1.25 mmol/L, 0.63 mmol/L, 0.31 mmol/L, 0.15 mmol/L, and without metformin. Each concentration was performed in triplicate and its growth was constantly measured.

**Results:** Metformin exposed tumoral cell growth curves over 1.25 mmol/L concentration or higher were significantly lower than non-metformin exposed. Samples exposed to 0.63 mmol/L or less experimented no significant cell death.

**Conclusion:** Metformin concentrations or higher were significantly lower than non-metformin exposed. Samples exposed to 0.63 mmol/L or less experimented no significant cell death.

**References:**

- M. Vallejo Pascual1, M. Diago Santamaria2, M. Mures Quintana3, A. Turienzo Frade4, A. Garcia Gallego4
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**Introduction:** Colon adenocarcinoma is becoming a common disease in recent years. In Spain, annual incidence reaches 25.8 for men and 15.8 for women over 100,000 inhabitants.

**Objective:** Determination of the relationship between pathological diagnostic criteria and survival over five years in colon adenocarcinoma patients.

**Method:** Statistical Description of 458 patients surgically treated during the period 2000–2002 and monitored up to December 2009. For different levels of gender and age, the Logistic Regression is used to analyse the influence of several anatomo-pathological variables on the survival.

**Results and Conclusion:** There are more male patients than female (60.3% vs. 39.7%); most of the patients are over 60 years (84.5%). The tumor location (right or left colon), the level of differentiation (low, medium, high), or its mucosacutaneous nature, are not identified as relevant variables. Basically, long-term survival depends on the occurrence or not of metastasis.

**References:**

- Armando Perez de Prado, Claudia Perez-Martinez, Carlos Cuellas-Ramon, Jose M. Gonzalo-Orden, Alejandro Diego-Nieto, Marta Regueiro-Purriños, Maria Lopez-Benito, Jose M. Ajenjo-Silverio, Felipe Fernandez-Vazquez

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**New drug eluting stents (DES) have shown a high efficacy in restenosis prevention with reduced rates of stent thrombosis when compared with first-generation DES as result of better healing response.** To compare the results of different DES, 9 bare metal stents (BMS), 9 permanent- polymer paclitaxel eluting stents (PES) and 9 biodegradable-polymer biolimus eluting stents (BES) were tested in young domestic swine. After 28 days, we measured the %restenosis by angiography and histology, the endothelium-dependent vasomotor response and the functional endothelialisation rate (eNOS+ endothelial cells).

**Both DES show lower angiographic %restenosis than BMS: BES 3%, PES 15%, BMS 34%; p < 0.006. BES show lower histologic %restenosis (23%) than PES (36%) or BMS (37%), p < 0.05. Vasomotor response and functional endothelialisation are significantly (p < 0.04) better in BES or BMS than in PES.** In conclusion, BES show the highest antiproliferative effect. BES show a vascular healing pattern similar to BMS, significantly better than PES.

**References:**

- Armando Perez de Prado, Claudia Perez-Martinez, Carlos Cuellas-Ramon, Jose M. Gonzalo-Orden, Alejandro Diego-Nieto, Marta Regueiro-Purriños, Maria Lopez-Benito, Jose M. Ajenjo-Silverio, Felipe Fernandez-Vazquez

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**IMMEDIATE VASCULAR INJURY AFTER STENT IMPLANTATION IN A NORMAL CORONARY SWINE MODEL: CHARACTERIZATION AND PREDICTIVE FACTORS**

**Armando Perez de Prado, Claudia Perez-Martinez, Carlos Cuellas-Ramon, Jose M. Gonzalo-Orden, Alejandro Diego-Nieto, Marta Regueiro-Purriños, Maria Lopez-Benito, Jose M. Ajenjo-Silverio, Felipe Fernandez-Vazquez**

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The most established model of restenosis is based on the overstretch of a normal artery. The integrity of internal elastic lamina (IEL) and amount of compression of the media are critical predictors of the induced restenosis. To analyze the immediate vascular injury, 25 oversized stents were implanted in young domestic swine. Injury score was assessed assigning Score 0, IEL intact with media compression < 50% (Score 0A) or ≥ 50% (Score 0B), and Score 1, IEL lacerated.
Among 117 struts analyzed, none of them showed Injury Score 1 and only 23 (19.7% showed Injury Score 0B). The predictors of greater injury were: extreme stent sizes (2.5 and 4.5 mm diameter vs. the rest, \( p < 0.005 \)) and cross-section shape of the struts (circular vs. square, \( p = 0.021 \)).

In conclusion, immediate vascular injury is significantly lower than that described in longer follow-up studies. Stents with circular cross-sectional struts may induce higher immediate injury.

**DIFFERENCES BETWEEN PREDICTED AND MAXIMAL DIAMETERS OF COBALT-CHROMIUM STENTS: STENT RECOIL OR ARTERIAL RESTRICTION TO FULL EXPANSION?**

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Often, coronary stents do not achieve the maximal, theoretical, predicted size. The use of Cobalt-Chromium stents (CCS) bolsters this point because of alloy-intrinsic recoil.

To analyze the recoil of different CCS we implanted 25 CCS in young domestic swine. Off-line vessel diameters were measured in basal, balloon inflation and final states.

Final diameter was slightly smaller than balloon diameter (stent recoil 4.1\( \pm 3.2\)%) but notably smaller than predicted value (arterial restriction 11.8\( \pm 7\)%). Neither the vessel or stent size nor the stent brand showed any influence on the final results. However, those stents implanted at distal showed higher differences (arterial restriction 15.5\( \pm 8\) vs. 9.4\( \pm 5\), \( p = 0.03 \)).

In conclusion, the stents analyzed showed values of stent recoil equivalent to those described in vitro (\( \approx 5\)%) but the difference with theoretical diameter was more than twice. Even normal, elastic, arteries oppose a restriction to the full expansion with a mean value of 0.45 mm.

**CORONARY VASOMOTOR DYSFUNCTION IS NOT FULLY EXPLAINED BY THE REDUCED ENDOTHELIAL NITRIC OXIDE SYNTHASE (ENOS) ACTIVITY AFTER DRUG ELUTING STENT IMPLANTATION**

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Drug eluting stents have been associated with abnormal vasomotor response to Acetylcholine and an immature endothelium showing reduced expression of endothelial nitric oxide synthase (eNOS).

We implanted 18 bare metal stents (BMS), 18 paclitaxel eluting stents (PES), 9 simvastatin + paclitaxel eluting stents (SpES) and 9 biolimus eluting stents (BES) in domestic, young swine. The relationship between eNOS expression and the vasomotor response was assessed at 28 days.

The vasomotor responses were significantly different (\( p < 0.04 \)) among stents: change in diameter vs. basal, BMS +3%, PES −7%, SpES +1%, BES +6%. The eNOS expression were also significantly different (\( p < 0.0001 \)) among groups: BMS 88%, PES 78%, SpES 76%, BES 94%. A weak correlation was found between the vasomotor response and the eNOS+ expression (\( r^2 0.23 \), \( p = 0.003 \)).

In conclusion, the association between histological and vasomotor findings is very weak, raising the chance of different causal mechanisms other than eNOS reduced activity.

**PRIMARY TUMORS OF THE LACRIMAL SAC. A CASE OF PSEUDODACRYOCYSTITIS**

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**Introduction:** Infections of lacrimal sac can be sometimes confused with tumours.

**Methods:** 84-year-old male was referred for left eye dacryocystitis with failure of antibiotic treatment over the last four months. A subcutaneous mass of 4 cm in diameter, protruding, erythematous and hard consistency was noted. Orbital computed tomography (CT) revealed a lacrimal sac mass that destroyed the medial wall and floor of the orbit and infiltrated the medial rectus muscle. A fine needle aspiration showed a small cell malignant tumor. Immunohistochemistry classified the lesion as “un differentiated carcinoma with some neuroendocrine features”. The bone scintigraphy reported two lesions in bony pelvis suspect for metastases. The patient was diagnosed with small cell carcinoma in extended disease. He died eight months after starting treatment.

**Conclusion:** Although lacrimal sac tumours are uncommon, they must be considered in dacryocystitis with long-term progression.