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ABSTRACTS

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Presidents: Filippo La Torre, Giovanni Milito

Podium Presentation

BLEEDINGS

PERIRECTAL HEMATOMA AFTER STAPLED HEMORRHOIDOPEXY

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Postoperative complications rate following stapled hemorroidopexy (SH) may occur in up to 31% of the cases. Through the years, different complications have been reported, but we found only four cases of perirectal haematoma reviewing the literature.

A healthy 27-year-old man underwent SH for hemorrhoids.

Within the first 12 h after the procedure, patient complained of perianal and pelvic pain with hypogastric and suprapubic discomfort associate to hypotension. Acute bleeding was suspected and confirmed by a fall of haemoglobin blood levels to 7.5 g/dl. The patient remained haemodynamically stable because of prompt infusion of fluids. Digital rectal examination (DRE) revealed a posterior-right sided boggy mass with a perfect staple line. No signs of dehiscence or rectal bleeding were found. Abdominal ultrasound (US) and CT scan revealed an extensive perirectal haematoma invading the whole extraperitoneal area and displacing the rectum to the left. On postoperative day 6, a minimally invasive approach was adopted: a suprapubic drain was inserted in the haematoma under ultrasound guidance and about 1 L of fluid was removed.

From that time on, the patient had an uncomplicated hospital stay; on day 5th after the abdominal drainage, a CT scan was performed with to evaluate the evolution of the perirectal haematoma. Since the haematoma had almost collapsed the drain was removed. The patient was then discharged 2 days later and 1 month later is completely asymptomatic. The functional and anatomical result of SH was, despite all, successful.

Postoperative bleeding after surgery for haemorrhoids ranges from 0.01 to 25% depending on the procedure adopted. Bleeding after SH usually originates from staple line, and only 3% of the cases need to be surgically treated. Retrorectal haematoma is rare: first Maw A. in 2001, then Grau LA. In 2005 and Chikkappa MG. in 2010 reported a total number of only 4 cases. Our case together with the only 4 cases previously mentioned illustrates how although uncommon, life-threatening complications can occur after apparently straightforward surgery for haemorrhoids.

A meticulous haemostasis was performed and no signs of bleeding were detectable, but retrorectal haematoma seems to be an unpredictable complication. According to our experience, an early postoperative haemorrhage should be considered in a patient with unexplained hypotension after SH.

SUPERSELECTIVE ARTERIOGRAPHY AND INTRA-ARTERIAL INFUSION OF TERLIPRESSIN FOR ACUTE LOWER GASTROINTESTINAL BLEEDING: REPORT OF A CASE

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Lower gastrointestinal bleeding (LGIB) often requires surgeons to make a critical decision in an emergency situation. Treatment depends on the patient's age, cardiovascular condition and frequency and quantity of bleeding. Therapeutic options are based on medical treatment, operative endoscopy, selective angiography with local or peripheral infusion of vasoactive agents, arteriographic embolization or surgery.

We report a case of 84-year-old patient, who presented to our emergency department with massive rectorrhagia. Hemodynamics was preserved and an emergency angiography was performed. Celiac axis, superior and inferior mesenteric arteries selective arteriography showed a diffuse massive mucosal bleeding from the territory of the superior rectal artery.

This focus of hemorrhage was effectively treated with intra-arterial infusion of terlipressin (synthetic analogue of vasopressin, with longer duration of action), resulting in complete remission of bleeding with almost immediate re-establishment of arteriographic vascular anatomy. **Conclusions** Only one similar case of intra-arterial terlipressin has been described in literature. Angiographic administration of vasoactive drugs in LGIB could be a valid approach in selected patients, especially in those cases that are not susceptible to an operative and invasive procedure.

INCIDENCE OF SEVERE BLEEDING AFTER SURGERY FOR HEMORRHOIDS

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Background Postoperative rectal bleeding, a result of a hemorrhoidectomy, is one of the complications which occurs immediately after surgery. There is a 3% incidence recorded, however there is not enough documentation on further surgery performed.

The purpose of this article is to quickly put together a flow chart for the follow-up and management of the patients.

Methods Retrospective surgical study between the Siccr Centers. The parameters taken into consideration were the number of reinterventions following three principle techniques, which are, hemorrhoidectomy with Ligasure™, stapled hemorrhoidopexy, THD; the significant number of severe bleeding in recovery post surgery, the number of reinterventions, and the number of reinterventions with the same patient and the number of transfusions and conservative treatment.

Results After 407 procedures, 137 traditional Milligan-Morgan (MM) procedures, 237 MM with Ligasure™, 19 PPH and 14 THD. Significant hemorrhages that required hospitalization were 13, (3.4%) 2 after traditional Milligan Morgan (2%), 8 after Milligan Morgan with ligature (4%), 1 after THD (0.8%), and 1 after PPH (0.5%). No transfusions were required. Repeat interventions were 7 (1.9%): 1(1%) after a traditional MM and 5(2.5%) after a MM Ligasure™, and 1 (1%) after PPH. Conservative treatments were 5(1.7%) 1 after traditional MM(1%), 3 (0.95%) after traditional MM with Ligasure™, 1 after THD (1%), and 1 (1%) after PPH. Foley catheter tamponade was used in all cases. There were 2 cases of repeat reinterventions after MM with Ligasure™, and 1 after PPH.

Conclusions The incidence of significant hemorrhage after hemorroidectomy is about 3% in total. The number of repeat interventions is 7, about 1.9% of all procedures. Only one of these patients had 3 episodes of postoperative rectal bleeding.

OCCLUSIONS AND PERFORATIONS

ADHESIONAL SMALL BOWEL OBSTRUCTION AFTER OPEN AND LAPAROSCOPIC COLORECTAL SURGERY: A PROSPECTIVE LONGER-TERM STUDY

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Background Open colorectal surgery (CRS) leads to high rates of adhesive small bowel obstruction (SBO) and incisional hernia development with large clinical impact and financial burden. We evaluated the cumulative incidence of access-related complications in a cohort of patients who underwent open and laparoscopic CRS.

Methods We reviewed cases of elective or emergency CRS patients kept prospectively on a database and examined annually. Case notes were studied for SBO episodes requiring admission or reintervention. Development of incisional hernia with or without repair was also recorded. The diagnosis of SBO was defined by a combination of clinical criteria and imaging. Time interval of SBO, surgery type and setting, readmission length and findings at reintervention were recorded. Patients undergoing CRS for inflammatory bowel disease, patients with peritoneal carcinosis, or patients with SBO secondary to local or peritoneal recurrence during the follow-up were excluded. Patients who underwent other abdominal surgery during the follow-up were also excluded. Data were analyzed using the Mann–Whitney U test and chi-square test. The Kaplan–Meier method was used for cumulative probability of developing SBO.

Results From 1/03 to 11/09, 706 patients satisfied our criteria and underwent elective (67.4%) or emergency (32.6%) CRS (74.6% open and 25.4% laparoscopic). Median follow-up was 32.8 months (range 0.2–84.4). Forty-five patients (6.4%) experienced 67 SBO episodes and 15 required surgery (2.1%). There was a large variation in the time of first SBO occurrence, 44.4% occurred within 3 months, 28.9% between 3 and 12 months, and 26.7% after 1 year. The risk of surgery at first admission for SBO was 27.5%, and the number of readmissions predicted the need of surgery. The risk of reoperation was greatest during the first year after CRS and steadily rose every year thereafter. SBO was higher after pelvic surgery or extensive resections compared to minor procedures (8.4% vs 2.7%; $P < 0.01$; HR 2.6). Likewise, SBO risk was higher after elective compared to emergency surgery (7.8% vs 3.5%; $P < 0.03$; HR 2.1), but similar after open compared to laparoscopic surgery (6.8% vs 5.0%; $P > 0.05$; HR 0.8). Any previous or additional surgery raised the overall risk of SBO from 4.2 to 15.4%. Incisional hernia development was slightly superior, after open surgery.

Conclusions Colorectal surgery results in significant ongoing risk of SBO depending on the type of procedure. This risk seems to be similar in laparoscopic and open procedures higher after elective surgery and for patients with previous surgery. The number of readmissions for SBO predicts the need of surgery.

OUTCOME OF FULL THICKNESS EXCISION OF DEEP ENDOMETRIOSIS WITH COLORECTAL INVOLVEMENT

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Background Deep endometriosis is defined as a nodular mass infiltrating the peritoneum deeper than 5 mm. It is surgically challenging when it involves other organs, such as the bowel, bladder or ureters. The prevalence of deep endometriosis involving the bowel has been reported to be 5.3–12% in women affected by endometriosis. Deep endometriosis involving the bowel is most frequently localized in the recto-vaginal septum and less often in the sigmoid. Women with deep endometriosis have severe dysmenorrhoea, dyspareunia and dyschezia. Treatment consists of surgical excision through discoid resection or segmental resection. Complications of segmental bowel resections for indications other than endometriosis have been well documented. The complication rate, leakage and persistent bowel, bladder and

sexual dysfunctions increase when low resections are performed. Since outcomes following discoid bowel resection are poorly documented, we decided to analyze and report our series of full thickness excision of deep endometriosis with bowel involvement. **Methods** A prospective series of 122 women who underwent laparoscopic excision of deep endometriosis with bowel involvement was analyzed. We evaluated patient outcomes in terms of pain relief, clinical recurrence and intraoperative and postoperative complications. Surgery consisted of excision of deep endometriosis lesions, by dissection of the bowel layers involved by the disease. In case of muscolaris lesion, a single layer of suture has been used; in case of mucosal involvement, a double layer running suture is performed over the lesion. Care is taken not to reduce the size of the bowel lumen. At the end of the operation, the integrity of the bowel was checked using 150 ml of methylene blue in case of rectal lesions, and with 350 ml for sigmoid lesions, respectively. Important is to achieve adequate distension of the bowel, without excessive tension on the suture. Finally, two drains were left, one in the pouch of Douglas and one in the right paracolic gutter. **Results** Out of 122 consecutive women with deep endometriosis and bowel involvement, 105 required excision of the nodule from the serosal and from the muscularis layer of the bowel; meanwhile, 17 patients required full thickness resection of the rectal wall. Complications occurred in 8 patients, of which 4 bowel perforations, 3 ureteral lesions (2 lacerations and 1 transection) and 1 moderate peripheral nerve dysfunction. We did not observe any postoperative pelvic abscess, recto-vaginal fistula, bowel obstruction or late bowel and bladder dysfunctions. None of the procedures required laparotomic conversion. One patient required segmental bowel resection due to extensive bowel involvement; meanwhile, two patients required blood transfusion. Complete pain relief was obtained in 103 patients; recurrence of pain occurred in 19 patients. Five patients required re-intervention for the severity of the pain. **Conclusions** Data reported confirm the safety and efficacy of discoid resection in ensuring a good quality of life for women suffering from deep endometriosis associated with a low risk of recurrence and of intra- and postoperative complications.

LAPAROSCOPIC COLORECTAL SURGERY IN URGENCY AND EMERGENCY

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Background Laparoscopic colectomy (LC) is slowly becoming the standard of care for colon resection in elective conditions. However, the use of LC in the emergency is relatively unstudied. The authors describe their experiences on series of urgent and emergency LC for a variety of benign and malignant diseases of the colon and rectum. **Methods** The study examined 34 patients admitted to the Emergency Department of Tertiary level Hospital Policlinico Umberto I in Rome over a period of 3 years who underwent laparoscopic colectomy, performed by the same surgeon, expert in advanced laparoscopic techniques. Patient demographics, indications for intervention, the operational details, and postoperative complications were examined. **Results** Twenty LC were performed for benign disease complex, 12 for malignant disease, and one for iatrogenic perforation during colonoscopy. Two cases were converted to open procedure (5.8%), the mean operative time was 188 min (range 75–350 min). The average length of postoperative hospital stay was 6.57 days (median 6 days); there were no death in the study group. There were no specific complications or other complications that required surgical procedures; three patients had minor complications (wound infection). **Conclusions** With increasing experience, the LC becomes a surgical option to be offered to a patient even in nonelective situations. Because our experience is a retrospective series, the data must be validated by further comparative studies. It is also worth noting that the steep learning curve for elective LC must be overcome before these procedures.

OUTCOME OF EMERGENCY COLORECTAL SURGERY REQUIRING A DIVERTING STOMA

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Background In emergency surgery, the need of a stoma is very frequent and is related to severity of clinical conditions. The aim of this retrospective multicentric study is to assess mortality of colorectal surgery emergencies needing a diverting stoma, their outcomes and the stoma-related morbidity.
Methods Six colorectal units studied retrospectively all patients who underwent colorectal emergency surgery with the creation of a diverting stoma during the period 1/1/2009–31/12/2009. The overall mortality and morbidity related to ostomy were estimated to ascertain whether there was a relationship between morbidity and poor positioning of the stoma. A total of 109 patients (54 males and 55 females) were recruited (mean age 69.6 years). The postoperative mortality rate was 22% (24/109 patients). The follow-up period was 10.3 months (range 6–18 months). **Results** Thirty-three out of 85 patients (38.8%) underwent surgery for stoma closure. Temporary stomas were closed after an average period of 4.3 months. The ideal site of the stoma was marked preoperatively on 29 patients (26.9%). Postoperatively, in 12 patients (19.9%), the stoma was found poorly positioned considering the common criteria of distance from the bony landmarks, scars, and skin folds. Difficulties with adhesion of stoma bags occurred in 25 patients (22.9%): 1/29 (3.4%) in the positioned group, 28/56 (50%) in the nonpositioned. Stoma self-management difficulty was found by 25/85 patients (29.4%), 7/29 (24.1%) in the positioned group and 18/56 (32.1%) in the non-positioned, respectively. In patients with poorly placed stoma, bag adhesion difficulties and self-management difficulties occurred in 10/12 cases (87%) and 9/12 cases (75%), respectively. In 60/85 cases (70.5%), stoma-related complications occurred. In the poorly placed stoma group, complications arose in 11/12 cases (91.6%), in the well-placed stoma group, 59 out of 73 cases (67.1%) had complications instead. Stoma-related complications were as follows: dermatitis (18.35%), muco-cutaneous dehiscence (16.51%), retraction (12.84%), abscess (10.09%), prolapse (4.59%), hernia (3.67%), and stenosis (2.75%). **Conclusion** In emergency surgery, the need of a stoma indicates a very serious clinical condition, as confirmed by a very high perioperative mortality. The closure of an emergency-made-stoma was very unlikely afterward; therefore, it is necessary to consider that every emergency-made-stoma has a high probability of being definitive. These stomas appear to have a very high postoperative complication frequency, especially if poorly placed. Since the complication rate is lower when preoperative stoma-siting is performed; this procedure increases the possibility of good self-management and ideal rehabilitation furthermore.

LYMPHADENECTOMY IN ELECTIVE AND URGENCY FOR RESECTIVE COLORECTAL CANCER

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Background The aim of this study was to analyze the factors affecting the number of lymph nodes examined in colorectal cancer specimens after elective or emergency surgery on the current clinical practice in our surgical unit. **Methods** We considered 293 patients who had undergone surgery for colorectal carcinoma from July 2005 to December 2008 divided into two groups, 264 elective oncologic resections (group A) and 29 performed in emergency (group B). All patients underwent laparotomic or laparoscopic surgery for colorectal cancer. The groups were similar in age, stage, weight, and body mass index, different in gender and location of cancer. We analyzed prognostic differences in number of examined lymph nodes and factors involved in differences between groups. **Results** There were statistically significant differences in number of nodes harvested from the specimen (17.7 ± 10.7 for group A and 15.9 ± 10.2 for group B, p-value 0.40). Operative time was shorter in group B ($p = 0.06$). We did not observe differences between groups in survival rate ($p = 0.40$). **Conclusions** The results of the study suggest that a correct lymphadenectomy and an adequate lymph node harvest in colorectal cancer surgery are essential also in resections performed in urgency, to allow a correct staging and an accurate selection of patients for adjuvant chemotherapy, with improvement of results at follow-up.

WIRELESS CAPSULE ENDOSCOPY YEARS AFTER MICHELASSI STRICTUROPLASTY FOR CROHN'S DISEASE

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Recent studies report safety and efficacy of wireless capsule endocoscopy (WCE) in Crohn's disease (CD). A "patency" capsule (PC) has been developed to avoid retention, but its use is not free from complications. Michelassi stricturoplasty is suitable for multiple or long CD stenoses although the risk of postsurgical restenosis exists. In 2005, a 27-year-old woman, suffering from CD underwent surgery for a long ileal stenosis (74 cm), treated with a side-to-side isoperistaltic stricturoplasty, with a jejunostomy that was closed 7 months later. At 3-year follow-up, the patient was asthenic, pale and presented mild malleolar edema. A blood transfusion was necessary. Anaemic episodes subsequently recurred, with the need for further blood transfusions. The patient did not complain of obstructive symptoms.

Intestinal ultrasonography, pancolonscopy and aesophagogastroscopy were negative for recurrence. A small bowel barium enema was administered, revealing no stenotic tracts. Hypothesizing a chronic blood loss, and because of hypoalbuminemia (2.1 g/dl), we asked the patient's informed consent to perform WCE. We tested the patient with a PC, which was expelled intact after 38 hours. Wireless Capsule Endoscopy revealed a stenotic recurrence in a segment of the ileum. Fourteen days later, the patient had not expelled the capsule; but retention was not associated with any discomfort. Plain abdomen radiograph revealed the capsule retained at the level of the right iliac fossa. We performed surgery to treat the lesion detected by WCE and to remove the capsule.

We found the capsule stuck next to the distal edge of the previous Michelassi stricturoplasty, which presented a short tract of CD recurrence, narrowing the bowel lumen. Intra-operative exploration and enteroscopy performed through an enterotomy at the level of the recurrence excluded other CD sites requiring surgery. The capsule was extracted and the stricture treated with a Heineke-Mikulicz stricturoplasty.

In conclusion The use of WCE in CD has been a matter of debate, because of the possibility that the capsule could be retained in a stenosis. Retention is a complication reported to be as high as 13% in previously known CD. PC is a soluble capsule to be used before WCE for testing patients known to be affected with bowel stenoses. The isoperistaltic stricturoplasty described by Michelassi is associated with the risk of postsurgical restenosis due to the thickness of the diseased tissues of the proximal and distal edges of stricturoplasty. We report the first case of an endoscopic capsule stuck in an outlet stenosis of a long-stricturoplasty previously passed by PC; we also suggest the use of Heineke-Mikulicz stricturoplasty to re-treat stenoses developed in the ileum of the Michelassi. We found WCE useful in accurately localizing a stenotic tract otherwise undetected, concluding that retention could not always be a drawback.

We believe that WCE can be performed in selected CD patients who have undergone surgery. However, further studies are needed to clarify the role of WCE in patients with long-stricturoplasties and to establish which examination could be the most effective in selecting patients.

ENDOSCOPIC PALLIATION OF UNRESECTABLE RECTO-SIGMOID CANCER

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Background Patients with unresectable or metastatic rectal cancer may have symptoms of obstruction, bleeding, pain, or tenesmus. Insertion of a self-expandable metal stent (SEMS) is the most feasible and durable nonsurgical method for relieving obstruction and has been reviewed in literature. Other endoscopic methods of palliating obstruction have been largely replaced by expandable metal stent placement. However, laser ablation is still a useful therapy for some patients, particularly when the predominant symptom is rectal bleeding. **Methods** In the last 3 years, we have endoscopically treated 8 patients with unresectable sigmoid-rectal tumors. Mean age of the patients was 74 years (68–88 years). All the patients were considered inoperable due to liver and lung metastasis. In six patients, we positioned SEMS under radiological guidance. Two patients, with large bleeding lesions, were treated with the neodymium yttrium aluminium garnet (Nd:YAG) laser. In all cases, biopsy was performed before the therapy. **Results** No major complications, such as bleeding or perforation, occurred in any patient. In one case, it was necessary to re-stent the tumour after 12 months because of re-obstruction. No re-obstruction occurred in the two patients treated with laser after a six months follow-up even if two treatments were necessary for complete recanalization. One patient with liver and lung metastasis is still alive after 3 years, 3 patients died after 8 months while 4 patients are still alive after 8 months. **Conclusions** Patients who are not candidates for either curative or palliative surgery can experience good symptomatic relief from malignant large bowel obstruction via laser therapy or placement of a colonic stent. In patients with large lesions, laser therapy can be used alone or in conjunction with SEMS to restore intestinal continuity and decompress the large bowel.

ACUTE TUMORAL LEFT COLONIC OBSTRUCTION: EMERGENCY TREATMENT BY COLOSTOMY VS METALLIC STENTS

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Background Acute intestinal obstruction frequently reveals left-sided colonic tumors, requiring urgent colostomy before definitive evaluation and treatment. The aim of this study is to evaluate a new conservative approach using self-expanding metallic stents. **Methods** Thirty-three patients admitted for acute obstruction of the left colon were retrospectively divided in two groups depending on the type of intervention performed to treat the obstruction ("colostomy" group: 17 patients and "self-expanding stent group": 16 patients"). We studied complications after desobstruction, length of hospital stay and surgical strategy used after the acute phase. **Results** Time between desobstruction and colectomy was shorter in the "self-expanding stent group" than in the "colostomy group" (18.5 days versus 73 days). Age greater than 75 years and colostomy were the two main factors predicting the risk of definitive colostomy ($P < 0.05$). Overall mean hospital stay was longer in the colostomy group (32.7 days versus 19.3 days, $P = 0.02$). Two perforations and one local recurrence occurred in the "self-expanding stent group". **Conclusions** Self-expanding metallic stent can decrease the permanent colostomy rate and the number of interventions. The recurrence rate seems to be theoretically increased with the stenting method. We believe that colostomy must be performed for patients in curative situation. The self-expanding metallic stent should be used as a palliative care.

EMERGENCY IN BENIGN CONDITIONS

ELECTIVE AND EMERGENCY SURGERY FOR DIVERTICULAR DISEASE

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Background Treatment of diverticular disease (DD) depends on clinical condition, but appropriate timing for surgery and best surgical approach are still under discussion. In this study, we retrospectively analyzed outcomes of surgical resection for diverticular disease at our Institution.

Methods From 2007 to 2010, 262 patients, 120 males (45.8%), mean age 63 ± 12.6, underwent surgical resection for acute or recurrent DD in our department. Emergency surgery was performed in 49 (18.7%) patients for acute complicated diverticulitis (25 cases of perforation and 24 of obstruction) and elective surgery in 213 (81.3%). Data on surgical procedure, complications, and their treatment were compared in patients who underwent elective or urgent operation using t test and chi-square test.

Results The patients underwent laparotomic resection in 122 cases (46.6%) and laparoscopic resection in 140 (53.4%). In 255 (84%) cases, a resection with primary anastomosis was performed, in 35 (13.7%) cases with stoma. In 7 cases, all emergency, a Hartmann's procedure (HP) was performed. In the 42 (35 + 7) patients with a stoma, it was subsequently reverted in 34 cases (80.9%, after 3.5 ± 2.1 months), 8 patients had not reversion. The former group had a mean age of 63 ± 14 years, the latter 77 ± 9.7 years ($P = 0.01$). The rate of ostomy reversion was 57.1% after HP and 88.2% after RPA ($P = 0.05$). Among the 220 patients with primary anastomosis without a stoma, 17 (7.7%) experienced an anastomotic leak. Rate of anastomotic fistula sorted by Hinchey score was as follows: 2% in the mild clinical recurrent diverticulitis, 7.1% in Hinchey I, 12% in Hinchey II, and 25% in Hinchey III stage ($P = 0.05$). Ten of 17 patients with anastomotic leakage (58.8%) underwent surgical revision and ostomy (in 5 cases, a HP was performed).

The emergency operations were performed in 61.2% of cases with open technique, compared with 43.2% of elective operations ($P = 0.01$). ASA III patients were 25 (11.7%) in elective surgery and 8 (16.3%) in emergency (P = ns). Of the patients, 51% had an emergency surgery in Hinchey III or IV versus 0% of patients operated electively ($P = 0.000$). Among patients in Hinchey stage II, 92% were operated in emergency and 0.9% in elective surgery ($P = 0.003$). The rate of colostomy in elective operations was 8.9% and 46.9% in emergency ($P = 0.000$), their rate of reversion 84.2% and 78.3% (P = ns), respectively. The rate of anastomotic leakage was 14.3% in emergency and 4.7% in elective patients ($P = 0.02$).

Conclusions Elective surgical treatment of diverticular disease is indicated for recurrent diverticulitis; in these cases, laparoscopic RPA is a viable option, with a low rate of anastomotic leakage. In emergency, digestive diversion is justified by the higher rate of anastomotic leakage and overall patient conditions. We believe that RPA with temporary stoma is preferable to Hartmann's procedure in cases in which a digestive diversion is thought to be necessary.

POSTOPERATIVE COMPLICATIONS AFTER PPH AND STARR

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Background PPH (Procedure for Prolapse and Hemorrhoids or Stapled Hemorrhoidopexy) and STARR (stapled transanal rectal resection for obstructed defecation) carry low postoperative pain, but may be followed by unusual and severe postoperative complications. **Methods** The present review deals with the pathogenesis, the prevention and the treatment of adverse events that may occasionally be life threatening. All meta-analysis, prospective trials, case series, case reports, and abstracts reporting postoperative complications after PPH and STARR from all mayor electronic databases (Medline, Embase, Cochrane Central Register of Controlled Trials) were reviewed. In addition, the adverse events requiring intervention using the PPH01 or PPH03 staplers (Ethicon Endo-Surgery, Inc., Cincinnati, OH) on the U.S. Food and Drug Administration (FDA) Center for Devices and Radiologic Health (CDRH) were examined. **Results** PPH and STARR carry the expected morbidity following anorectal surgery, such as bleeding (up to 11%), strictures (up to 9%), and fecal incontinence (up to 19%). Complications that are peculiar to the stapled procedures are recto-vaginal fistula especially after STARR but also occurring in 0.2% of cases after PPH, chronic proctalgia, total rectal obliteration, hematoma or perforation with pelvic sepsis requiring a diverting stoma. The latter complication may also require an abdominoperineal procedure and may be fatal. A higher complication rate and worse results are expected after PPH in 4th degree piles. Enterocele, anismus, large rectoceles, and weak sphincters are negative predictors after STARR.

Conclusions In conclusion, complications after PPH and STARR are not infrequent and may be difficult to manage. However, if performed in selected cases by skilled specialists aware of potential risks and associated diseases, some complications may be prevented.

VAGINAL EVISCERATION, A RARE BUT CRITICAL SURGICAL EMERGENCY IMPLYING A MULTIDISCIPLINARY APPROACH

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Vaginal evisceration is a rare condition, mainly reported in post-menopausal women after previous hysterectomy or other pelvic surgery or in patient with enterocele or traumatic events. It is sporadically reported in woman without previous pelvic surgery. The management of this rare but potentially life-threatening condition is prompt recognition and immediate surgical intervention.

We report two etiologically different cases that came to our attention within the last 18 months and received different management.

Case 1. An 87-year-old parous was admitted to the emergency room complaining of a sudden sensation of something falling down vaginally. Symptom onset was less than 1 h at the time of presentation to our emergency room. At pelvic examination, a consistent portion of apparently healthy small bowel extruded from her vaginal cuff. At history taken, she had had an abdominal hysterectomy three years before, and a no better specified vaginal prolapse was observed at her last gynecological examination one year ago. The Gynecological staff involved our Surgical team and an abdominal approach was decided to reposition the bowel under direct vision. An antibiotic therapy was started and bowel viability was confirmed abdominally after it was reduced into the abdominal cavity. At inspection, a 2-cm transverse hole within the vaginal cuff was observed, and after edges resection (chronic inflammatory findings at histology), it was sutured and suspended to the remnant of the right uterosacral ligament, the only one identified.

Case 2. A 52-year-old 2para presented quite similarly to the lady of case 1. She had recently (4 months before) undergone an abdominal radical hysterectomy for cervical cancer. The surgical team was also involved: bowel viability was assessed, and a bigger dimension of the vaginal cuff hiatus was crucial in deciding for a vaginal surgical approach. Under general anesthesia, anti-Trendelenburg position, and antibiotic therapy, the viable bowel was gently reduced vaginally into the abdominal cavity. Vaginal edges were excised (exclusively inflammation at histology) and then sutured vaginally.

Both patients recovered without any complications. At one-year follow-up, case 1 was well with a well-suspended vaginal apex and normally functioning bowel. Case 2 was similarly well suspended at 1-month follow-up and returned to her oncologic center for subsequent assessment.

The surgical approach to this condition can differ according to etiology, clinical presentation, and surgeon preference. Major differences in our cases were as follows: patient age, timing of previous surgery, vaginal hiatus dimension, and finally surgeon judgment and preference. Among these differences, only surgeon's choice can be debated, but the happy endings of both cases clearly demonstrates that prompt diagnosis and treatment are the key to success.

FOURNIER'S GANGRENE: REPORT OF A CASE SUCCESSFULLY TREATED BY VACUUM-ASSISTED CLOSURE AND COLOSTOMY

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Fournier's gangrene is a rapidly progressing necrotizing fascitis of the perineal and genital area. We report a case of Fournier's syndrome that required surgical treatment in emergency. The patient was treated with the packaging of loop colostomy, surgical debridement, and vacuum-assisted closure (VAC). **Methods** A 41-year-old male at A&E departments, local examination of the scrotum circumference revealed a swelling and redness that had extended to the perianal area with 10.98 WBC, 12.9 g/dl Hb. In an emergency operation, incision and drainage of the perineal area and debridement with a loop colostomy were performed. The loop colostomy was created to avoid infection in the perineal area. The next day, the patient was treated by VAC; an intravenous infusion of 4.5 g $\times$ 4 pipercillin sodium was administered daily, after that was isolated Escherichia coli (62% of the most frequently isolated organism). Our patient was treated with eight VAC dressings, one every three days.

The patient was discharged 25 days after the operation. Eight months later the colostomy was closed. Based on our clinical experience, we believe that vacuum-assisted closure dressings are particularly effective in the management of large wounds: in fact, the perineal wounds are perfectly healed.

Fournier's gangrene is associated with a high mortality rate, and in severe cases that are complicated with infection protracted from defecation, we believe that it would be most effective to perform a loop colostomy in emergency, and VAC dressings after surgical debridement.

We believe that a loop colostomy in perianal Fournier's gangrene may be useful to accelerate wound healing by avoiding fecal contamination as well as indication can be suspicion of rectal perforation, fistulas and sphincteric dysfunction. The VAC was effective in accelerating wound healing by stimulating tissue regeneration and preventing infection in a heavily contaminated area.

ANASTOMOTIC LEAKAGES

ENDOSCOPIC TREATMENT OF BENIGN ANASTOMOTIC COMPLICATIONS AFTER COLO-RECTAL SURGERY

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Background Anastomotic complications after colorectal surgery are still a problem. According to the literature, about 20% of the patients will have an anastomotic complication: fistulas or dehiscence between 8 and 11.6% while stenosis between 5.8 and 20%. Physiopathogenesis of this complication is still unclear: but ischemia at the site of anastomosis, previous radiotherapy and the use of staplers play an important role. In almost all cases, it is possible an endoscopic treatment. We present here our experience over the last five years.

Methods Thirty-five patients were referred to our Endoscopic Dept after colorectal surgery. Eight patients had an anastomotic fistula, 6 colorectal and 2 colo-colic, and 27 a stenosis, 25 colo-rectal and 2 colo-colic. The patients' mean age was 46 years (25–86 years); 22 males and 13 females. An ileostomy or colostomy was present in the fistula patients while it was present in 12 stenosis patients. The fistula patients were treated by inserting a covered removable self-expanding stent while the stenosis patients were treated with pneumatic dilatation, argon plasma coagulation and, in 14 with a covered removable self-expanding stent (SEMS). Two patients had complete obstruction of the anastomosis: radiologically and endoscopically, it was obtained a new canalization. SEMS were left in place for at least two months or eventually were spontaneously expelled.
Results The patients with anastomotic stenosis obtained excellent results as all of them obtained a good recanalization after a mean of 2.3 balloon dilatation and plasma coagulation or SEMS placement. One pt resulted in perforation with peritonitis, and he was operated and a new anastomosis performed. No other complication was observed. The patients with anastomotic fistula healed with the SEMS: in two cases, it was positioned a large SEMS as used to treat aortic aneurism.
Conclusions Cooperation among radiologist, surgeon and endoscopist is needed to drain anastomotic abscess and treat the postoperative lesion also in emergency. The endoscopist has several tools for treating this kind of colorectal surgical complication that can be applied choosing the best solution case to case.

MANAGEMENT OF URETERAL LESIONS FOLLOWING SURGERY FOR DEEP ENDOMETRIOSIS INVOLVING COLO-RECTAL TRACT OF THE BOWEL

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Background Ureteral lesions represent a well-known complication in gynecologic surgery. Even though overall incidence of ureteral lesions is less than 1%, almost 6% of all medico-legal cases in Obstetrics and Gynecology are related to ureteral lesions. Incidence changes based on the type of surgical procedure, ranging from 0.1 to 1.5% for benign procedures up to 5% for oncologic procedures. The incidence of ureteral complications after surgery for deep endometriosis has been documented in a recent article, which reported that the general incidence of ureteral lesions during this procedure was around 1.5%. Furthermore, the risk of ureteral lesions rises up to 21% for large endometriotic nodule invading the rectum and laterally the ureters with subsequent hydronephrosis. Traditionally, ureteral lesions are treated by laparotomy. Lacerations are treated with a double J stent with or without sutures and when this fails or after transections, ureteral reimplantation in the bladder is generally performed. Over the last decade, laparoscopy aided treatment of ureteral injuries, by laparoscopically guided stent insertion and consecutive suturing a laceration or performing a reanastomosis in case of transaction. Data, however, are still small. To contribute to this, we reviewed treatment and outcomes of all our ureteral lesions following excision of deep colo-rectal endometriosis. **Methods** A prospective series of 122 patients undergoing surgery for deep endometriosis with bowel involvement has been analyzed for ureteral complications. Incidence, localization, treatment, and outcome are reported. In case of laceration, technique consisted in laparoscopic stent insertion followed by 2/3 stitches of polyglecaprone 25 5–0. In case of complete ureteral transection, a reanastomosis over a stent with 5 stitches of polyglecaprone 25 5–0 was performed. Follow-up included 6 weeks of stenting followed by pyelography for confirmation of ureteral patency. **Results** Over 122 patients, 3 ureteral lesions were identified, all involving the left ureter, and repaired intraoperatively. In one case, ureter was completely transected due to the extensive lateral involvement of the endometriotic nodule. In the other two cases, a laceration of 0.5 and 1 cm long respectively resulted from the dissection of the lateral part of the nodule from the ureter. In all three cases, a pre-operative hydronephrosis was documented due to the extension of the disease. Outcome has been uneventful in all patients, and the follow-up pyelography showed no sign of residual hydronephrosis nor ureteral stenosis. **Conclusions** Deep endometriosis surgery leads to a significant risk of ureteral lesion. In case of hydronephrosis, the exponential augmented risk of lesion requires pre-operative stenting; otherwise, we favor the use of stents upon indication only. These results confirm that laparoscopic treatment has become an option for the repair of ureteral lesions. The minimal invasiveness of a laparoscopic treatment makes this technique preferable for ureteral lacerations and transections. There are no data supporting what should be done when the first-line laparoscopic treatment fails, because a second laparoscopic intervention was never attempted.

IATROGENIC ISCHEMIC COLITIS AFTER SURGERY FOR ANORECTAL TUMORS

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Background Iatrogenic ischemic colitis is one of the complications of anorectal surgery. The reduction of blood flow to the proximal stump of the bowel can lead to trophic disorders of colon that can appear as small submucosal or intramural haemorrhage, that can be reversible, but also as ulcerations, that can evolve (in the long term) into colonic stenosis and stricture, or in the most severe cases, in anastomotic leakage, colonic gangrene and secondary peritonitis. **Methods** We studied four patients who underwent surgery for cancer between 2006 and 2009 and that developed ischemic colitis in the postoperative period, confirmed by endoscopy, water-soluble contrast enema and histopathology. One patient underwent laparoscopic left hemicolectomy and RAR for low rectal cancer, one underwent left hemicolectomy, RAR, temporary ileostomy and hysteroannessiectomy for locally advanced rectal tumor; one patient had RAR with temporary ileostomy for adenocarcinoma of rectum, and one underwent abdominoperineal resection of the rectum with perineal colostomy and temporary ileostomy for anal carcinoma. **Results** Patients underwent different treatment according to the severity of symptoms. Two patients were treated with surgery; one was submitted to resection of the ischemic colonic stump with terminal colostomy (subsequently, a coloanal anastomosis was confectioned). One patient underwent resection of the ischemic colonic stump with a new perineal colostomy and graciloplasty. The other two patients were treated conservatively: one of them with endoscopic pneumatic dilatation and the other with a temporary stent. All patients underwent recanalization. At the last follow-up, intestinal function was satisfactory in all of them. **Conclusions** Therapy of iatrogenic ischemic colitis is closely related to the severity of clinical presentation. Surgical treatment should be reserved to patients with more severe clinical picture. Surveillance, prompt diagnosis and treatment are mandatory to avoid colonic perforation, anastomotic leakage, transmural colonic gangrene. In some patients, the presence of a temporary stoma can avoid severe complications, allowing endoscopic conservative treatment.

ANASTOMOTIC FAILURE AND POSTOPERATIVE COMPLICATIONS IN RADICALLY RESECTED RECTAL CANCER: A RETROSPECTIVE ANALYSIS OF A CONSECUTIVE SERIES

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Background A series of consecutive patients operated for rectal cancer is reported; incidence of anastomotic failure and of postoperative complications is discussed.
Methods One hundred eighty-one consecutive patients were operated on for rectal cancer: 37 were excluded because operated with abdominoperineal resection or Hartmann's procedure, without anastomosis.
In the remaining 144 patients, there were 84 males (58%) and 60 females (42%), with a median age of 66 years (±11); 46 (32%) had cancer in the upper third of the rectum, 56 (39%) in the medium third, and 42 (29%) in the lower third of the rectum. The pTNM was as follows: 50 stage 1 (35%), 38 stage 2 (26%), 43 stage 3 (30%), and 13 stage 4 (9%). All patients were scheduled for neoadjuvant or adjuvant therapy, according to standard protocol. Of the 144 anterior resections 46 were high anterior resection (HAR) and 98 low anterior resection (LAR); in LAR procedures, 68 diverting stomas were performed (69%). All the anastomoses were straight and stapled performed: the technique of anastomosis was in 84 cases a transanal double-stapling (Knight-Griffen) anastomosis, mainly for mid and low rectal cancer and in the others 60 a transabdominal laterotherminal anastomosis, mainly for upper cancer. **Results** There were 3 postoperative deaths (2%), 15 (10%) postoperative medical complications, and 32 (22%) surgical complications, with 25 anastomotic leakages (17%): in 11 of these cases (44%), a reoperation was performed, while in the other 14 cases, a conservative treatment was administered: only one patient died from the septic consequences of anastomotic leakage. The incidence of anastomotic leakage was 6.5% for the upper third rectal cancer, 16% for medium third, and 31% for lower third ($P < 0.001$ for upper third vs lower third, n.s. for upper third vs medium third and medium third vs lower third); anastomotic failure was 85 in T1-T2 cancer and 23% for T3-T4 ones ($P < 0.05$). If we consider the anastomotic technique, the incidence of failure was 24% for double-stapling and 8.5% for laterotherminal ($P < 0.05$); finally, the incidence of anastomotic failure in 98 LAR was 28% in patients in whom was performed a diverting stoma and 20% in those who did not receive a diverting stoma ($P =$ n.s.). Finally, the incidence of anastomotic failure in mid and low rectal cancer who received preoperative radiotherapy was 23%, while in these who did not receive preoperative RT was 17 ($P =$ n.s.). **Conclusions** Surgery for rectal cancer remains a challenge for surgeons, due to anastomotic and others postoperative complications; this retrospective study showed that several factors influence the results: as regards leakage, in our experience, the most important factors that can influence are the site, the stage of the tumor and the technique of anastomosis, while others factors like diverting stoma and preoperative radiotherapy are less determinant, and do not reach a statistical significance.

ANASTOMOTIC LEAKAGE AFTER ANTERIOR RESECTION FOR RECTAL CANCER: INCIDENCE, RISK FACTORS AND TREATMENT

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Background This study was designed to evaluate the incidence, the risk factors and the treatment of anastomotic leakage in a population of rectal cancer patients who underwent potentially curative anterior resection at a single institution over a 20-year period.
Methods During the period January 1991–May 2010, 475 patients with primary adenocarcinoma of the rectum underwent anterior resection with a primary colorectal or coloanal anastomosis in our unit.
In 184 cases, the tumour was in the upper rectum in 131 in the middle rectum and in 160 in the lower rectum. The median patient age was 64 (range, 22–85) years, including 296 men and 179 women. One hundred eighty-eight patients with cancer in the mid-low rectum underwent radio- or radiochemotherapy as neoadjuvant treatment; in 99 patients received also IORT. Four-hundred and sixty-four anastomoses were straight and made with a circular stapler: 309 (64.8%) end-to-end single-stapling anastomosis, 65 (13.9%) end-to-end double-stapling anastomosis, 90 (19.1%) side-to-end anastomosis. Only eleven (2.2%) patients underwent trans-anal hand-sewn coloanal anastomosis. A diverting stoma was constructed in 164/475 patients (34.5%), more frequently in the group of patients with mid-low rectal cancer with respect to patients with high rectal cancer (47.1% vs 14.6%, respectively; $P < 0.00001$), and in irradiated patients compared to not irradiated ones (54.2% vs 21.6%, $P < 0.00001$). **Results** The incidence of clinically symptomatic anastomotic leakage was 6.3% (30/475); including isolated pelvic abscesses, without the radiological or endoscopic confirmation of the anastomotic dehiscence, this percentage raised to 9% (43/475). The leakage rate of mid-low rectal cancer was higher than that one of the upper rectum (10.6% vs 6.5% respectively; $P = 0.126$). The difference in leak rate between patients with rectal cancer <6 cm from the anal verge and those ones with cancer >6 cm was statistically significant (6.7% vs 13.8%, respectively; $P = 0.011$). The patients who received preoperative radio/radiochemotherapy did not present significant differences in leak rate when compared to the patients who underwent surgery alone. No significant differences were found in leakage rate among the different types of anastomosis, even if a not significant trend towards higher anastomotic failure was noticed in case of the double-stapling technique (12.3%). Similar rates of leak were found among patients with and without a primary stoma (9.7% vs 8.6%, respectively; $P = 0.698$). There was no death as a consequence of an anastomotic leak. **Conclusions** Our data show that the closer is the anastomotic level to the dentate line, the higher the risk of leakage. We demonstrated that the use of a protective stoma does not seem to decrease the leakage rate, but to reduce the risk of reoperation and definitive stoma.

INJURIES: PAIN

MANAGEMENT OF COMPLEX PELVIC WOUNDS USING VACUUM-ASSISTED CLOSURE (VAC) THERAPY

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Background The use of a sub-atmospheric pressure dressing, named vacuum-assisted closure (VAC) device, is known to be helpful in accelerating the healing of various wounds. We propose the application of VAC therapy in soft tissue injuries after high energy pelvic trauma. **Methods** In the last 5 years, we used VAC therapy in 3 patients with pelvic trauma involving soft and perirectal tissue. In all patients, we performed a wide surgical debridement of the injured tissue and a loop colostomy to avoid fecal contamination. The mean time of VAC therapy was 12 days (range 16–10 days). Two patients underwent to delayed skin grafting with good results, the other one was left to secondary healing. There was no need of further surgical debridement, and there was no local wound infection. **Results** The mechanism of VAC therapy is based on the consideration that the optimal sub-atmospheric pressure for wound healing is approximately 125 mmHg utilizing an alternating pressure cycle of 5 min of suction followed by 2 min of suction. This technique optimizes blood flow, decreases local tissue edema and removes excessive fluid from wound bed, facilitating the removal of bacteria and increasing formation of granulation tissue.

The VAC therapy represents a temporary protection of soft tissue defects by means of polyurethane foam that is sealed airtight by a polyvinyl foil, while a negative topical pressure gradient is generated by a VAC unit. The main limitation is the careful maintenance of an airtight seal over irregular surface of the wound, by application of the adhesive drape which can be particularly difficult in the hip and perineum.

In Literature, there are also reports about the use of VAC therapy in cases of Fournier's gangrene and after abdominoperineal excision. **Conclusions** VAC therapy is a useful device for temporary coverage of large tissue defects, also in the pelvic region, consisting in a better control of potentially infected tissues and facilitating definitive wound closure.

HEPATIC ABSCESS AFTER TREATMENT FOR ANAL FISTULA

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Hepatic abscess is a severe disease that can be fatal if not diagnosed early and treated appropriately. It is usually caused by pyogenic bacteria (Klebsiella pneumoniae, Escherichia Coli, Enterococci), but it can occur in amebiasis and listeriosis. The cause of the infection may remain undetermined, particularly in immunologically or metabolically compromised patients. Abscess formation can follow endoscopic or coloproctological treatment (polipectomies, banding of haemorrhoids), or it may be the first sign of a severe intestinal disease (Crohn's, RCUE, colorectal carcinoma). Besides specific medical therapy, treatment includes percutaneous or surgical drainage. Rarely hepatic resection must be considered in cases not responding to treatment or in those with extremely severe infection ab initio. We present a case of a complex anal fistula in a 63-year-old female, with a previous history of poliomyelitis and perineal treatment with Marconi therapy when she was ten years old. We had been treating her for 15 years for a high transphincteric fistula with simple curettage with loose seton which was changed every 6 months. Two years ago, she developed an anorectal abscess, and we performed a curettage under epidural analgesia. Three days later, the patient complained of fever, which was treated with antibiotics. The high temperature persisted and a CT scan was carried out. This showed a large hepatic abscess which was then treated by us-guided percutaneous drainage with resolution. We could not find any specific pyogenic agents in the pus from the abscess. We have not found any case in the literature of hepatic abscess following the treatment of a cryptogenetic fistula. An abdominal CT scan should be performed in all patients with a fever of uncertain origin after the treatment of an anal fistula.

CIVILIAN RECTAL INJURIES: MANAGEMENT AND PERSONAL EXPERIENCE

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Background Rectal injuries are associated with high morbidity and mortality. Controversy persists regarding surgical strategy, in fact the treatment protocols have paralleled the principles evolved from military warfare and transferred to civilian rectal trauma, without consensus about the real efficacy of routinely diverting stoma, presacral drainage and distal washout. **Methods** Seven patients in 10 years were admitted to our attention for rectal injures. Pediatric and obstetric trauma were not included. Anatomically in 3 patients the trauma involved the intrapetironeal rectal portion, we performed a primary closure without colostomy in 2 cases and 1 colostomy with bladder suturing and omental interposition with cystostomy because of an associated urinary lesion. In all 4 patients with extraperitoneal rectal wounds, we performed a colostomy and only in 1 case sutured the rectal laceration. The presacral drainage was used in 1 case with associated bony fractures. **Results** We have no mortality, the morbidity was due to problems related to colostomy, the most frequent being skin excoriation. The anatomical location of the rectal injury, intraperitoneal versus extraperitoneal portion, has a major influence on management. Also, complete balance of possible associated lesions can address the treatment. Computed tomography scan is essential in diagnosis, the use of protocol issue including the use of oral, rectal and intravenous contrast is necessary to maximize the diagnostic accuracies in anorectal trauma; the endoscopy has a more limited role. In case of intraperitoneal lesion, in absence of peritonitis and without associated lesions of the genitourinary tract, a primary closure without colostomy can be safely performed. Extraperitoneal rectal injures can be left untouched and a loop colostomy done, in fact the primary repair of extraperitoneal injuries is often difficult because of the anatomical characteristics of the region, such us the adjacent sacral venous and hypogastric nerve plexus, and the urogenital structures. Furthermore, opening of the peritoneal reflection may cause contamination of the peritoneal cavity and may be associated with complication like bladder dysfunction and impotence, above all in male patients. A diverting stoma could not be performed in case of

destructive injuries involving less than 25% of rectal circumference, but in literature, there are not definitive conclusions, so management by a stoma can be safely in every case of extraperitoneal wounds. Presacral drainage gained popularity during the Second World War, but showed no benefit in the management of civilian rectal injuries, besides it is related to a great patient's discomfort.

Distal bowel irrigation is associated with an high risk of infection because of spilling intraluminal contents out of unrepaired rectal perforations. **Conclusions** Computed tomography scanning is essential to make a complete lesion's balance. Intraperitoneal rectal injures can be managed by primary closure, with or without colostomy. In case of extraperitoneal rectal trauma, colostomy without rectal injury repair seems to be safe.

WATER-FILLED BALLOON SONOVAGINOGRAPHY FOR DEEP ENDOMETRIOSIS INFILTRATING THE BOWEL: A DIAGNOSTIC TECHNIQUE FOR SURGICAL PROCEDURE PLANNING

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Background Deep endometriosis is the most severe form of endometriotic disease and is characterized by nodular lesions deeper than 5 mm under the peritoneum. It often involves pelvic organs as bladder, ureters, and bowels. Surgical approach is therefore complex, and a correct pre-surgical mapping of the disease is crucial. Since the dimensions of the nodules directly correlates to the depth of infiltration in the bowel, a complete evaluation of the nodule's dimension, extension, and pelvic organs involvement is necessary. Traditional transvaginal sonography (TVS) is effective in the evaluation of anterior part of the pelvis (bladder and ovaries). However, due to the specific orientation of the probe, it seems to be not much effective for the diagnosis and evaluation of the extension of posterior compartment (utero-sacral ligaments, upper-posterior part of the vagina, recto-vaginal septum). We have therefore developed and validated the "Water Filled Balloon® vaginal sonography" (WFB-VS) technique, a new method for the mapping of deep endometriosis, in order to plan, before surgery, the optimal surgical approach.
Methods Vaginal sonography with Water Filled Balloon® consists of endovaginal sonography with introduction of a special balloon into the vagina, filled up with 60–120 cc of saline. The solution in the balloon generates an acoustic window between the probe and the surrounding structures near the vagina. The Water Filled Balloon® generates an expansion of the vaginal walls, determining an increased and more defined visualization of the vaginal walls, of the vaginal fornix, the uterosacral ligaments, the Douglas pouch, and of the recto-vaginal septum. Seventy-six patients with evidence of deep endometriosis underwent TVS, WFB-VS, and operative laparoscopy, to compare effectiveness of TVS and WFB-VS in detecting and measuring diameter of deep localizations of endometriosis and to evaluate both their superposition to laparoscopic findings. **Results** At TVS, 50 (65.8%) patients shown a deep localization of endometriosis; in 26 (34.2%) patients, no clear evidence of deep endometriosis was found. With WFB-VS, all the 76 patients shown a deep localization of endometriosis, and dimension of nodules was calculated.
Laparoscopic findings shown a deep localization of endometriosis in all patients (76); localization was recto-vaginal and right utero-sacral ligament in 20 patients; recto-vaginal and left utero-sacral ligament in 32 and recto-vaginal septum in 24. The results shown high sensitivity (100%) and specificity (100%) of the "Water Filled Balloon® vaginal sonography" related to laparoscopy findings. The mean volume of nodules excised by laparoscopy was 2.7–3 cm vs a mean volume of 2.2–3 cm measured during WFB-VS. The mean volume of nodules measured during TVS was 1 cm ($P < 0.03$).
Conclusions Water Filled Balloon® is a new method for the mapping of deep endometriosis; it provides detailed information about localization, extension, and infiltration of endometriotic lesions in the recto-vaginal septum. Furthermore, this technique allows a more accurate evaluation of the endometriotic nodule's volume. These are essential steps in planning the optimal surgery procedure and in the follow-up.

LAPAROSCOPIC TREATMENT OF DEEP PELVIC ENDOMETRIOSIS INVOLVING THE BOWEL: OUR EXPERIENCE

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Background The ideal treatment of severe deep pelvic endometriosis requires complete excision of implants. However, the role of bowel resection is still controversial. We reported our experience with the laparoscopic treatment of deep pelvic endometriosis involving the bowel.
Methods Data from all patients undergoing surgery for endometriosis were prospectively entered in a database in our institutions. We retrospectively reviewed this database in order to study patients who underwent laparoscopic treatment of deep pelvic endometriosis involving the bowel. Analyzed data included age, previous history of endometriosis, previous pregnancies, previous surgery, BMI, operative time, intra and postoperative complications, length of stay, short- and long-term complications as well as clinical long-term follow-up. We identified 22 patients (mean age 32.7, range 22–43 years) who underwent 27 procedures. Four patients underwent combined laparoscopic and vaginal approach. All but one patient had history of previous surgery. Preoperative symptoms included dysmenorrhea (60%), constipation/diarrhea (40%), dyspareunia (33.3%), tenesmus (20%), rectal pain (13.4%), rectal bleeding (6.7%) and bloating (6.7%), pain at defecation (21%). Nine patients (40.9%) had severe ureteral involvement with hydronephrosis. Preoperative investigations included endorectal ultrasound, barium enema and/or colonoscopy and pelvic MRI. **Results** Surgical management of bowel endometriosis included superficial serosal excision and/or implant disc excision on the recto-sigmoid or recto-vaginal septum (18 patients) or bowel resection and anastomosis (4 patients) in addition to treatment of all other implants. Six patients underwent also extended excision of periureteral endometriosis, one had resection and anastomosis of pelvic ureter for wall infiltration, one had partial bladder resection. No intra-operative complications were observed except one ureteral lesion treated with suture over stent. The conversion rate to open technique was 18.5% (5/27 cases). Postoperative complications were observed in 9.1% of patients (2/22 patients). One patient required reoperation with ureteral stenting and nephrostomy for ureteral lesion, and one because of fascial hematoma. Length of hospital stay averaged 7.5 ± 2 days. Mean follow-up was 2.1 years (range 1–64 months). Postoperatively, 86.4% of patients reported significant improvement of symptoms. Three patients with persistent pain and one with rectal bleeding required further surgery. Of these, two patients improved. A total of 3 patients, including 1 who underwent rectal resection, previously infertile became pregnant within 6 months after surgery. **Conclusions** Laparoscopic treatment of deep pelvic endometriosis is feasible and safe provided that skilled general

surgeons and gynecologists are available. Moreover, we noticed a high rate of ureteral involvement in deep pelvic endometriosis; therefore, we suggest preoperatory Urinary-CT scan and ureteral stenting in fourth degree endometriosis surgery.

AN UNUSUAL ANAL FISSURE

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Background In our clinic, a 63-year-old woman arrived because of an anal pain after defecation and bleeding with sphincter spasm. Since she had already tried all the anal fissure's usual therapies, without any results, we decided to perform an anoscopy under anesthesia. **Methods** On anoscopy, we discovered an ulcerative anal lesion situated 1 cm from the anal margin, and we started doing some biopsies on it. From the histological diagnosis, a neuroendocrine tumour resulted. The preoperative stage evidenced a T4 N0 M0.
Results Six months later, after preoperative radio-chemiotherapy, the patient underwent laparoscopic abdominalperineal resection. **Conclusions** During the presentation, we will talk about all the neuroendocrine tumours of the digestive tract.

PAIN AND HAEMORRHOIDECTOMY: META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS COMPARING LIGASURE^{TM} HAEMORRHOIDECTOMY AND CONVENTIONAL EXCISIONAL TECHNIQUES

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Background Haemorrhoidectomy is frequently associated with significant blood loss and pain-related complications. Recently, a variety of instruments including the circular stapler, ultrasonic scalpel, laser and a bipolar electro thermal device have been used in an attempt to reduce postoperative pain and blood loss and to allow fast wound healing and a quick return to work. The present meta-analysis compares LigaSure haemorrhoidectomy with conventional excisional techniques, circular stapling and Ultracision^{TM} haemorrhoidectomy in patients with symptomatic haemorrhoids. **Methods** A literature review was performed using the National Library of Medicine's Pubmed Database. Eleven randomised controlled trials comparing LigaSure and other techniques of excisional haemorrhoidectomy were included in the meta-analysis. The 11 trials contained a total of 850 patients; the largest study was based on 250 patients the smallest on 34 patients. **Results** Patients treated with LigaSure experienced postoperative pain VAS score ($P < 0.001$), wound healing time and time off from work ($P < 0.001$), less operative time ($P < 0.001$), than patients who underwent to excisional techniques. Postoperative bleeding did not significantly differ between the two groups ($P = 0.056$); however, the surgeons observed a reduction of intra and postoperative bleeding using LigaSure^{TM}. There was no significant difference in the proportion of patients cured after Ligasure haemorrhoidectomy or other excisional techniques ($P > 0.05$). In comparison to circular stapler and Ultracision^{TM}, the authors found similar postoperative outcomes and a favourable trend for LigaSure^{TM} as regards postoperative complications. **Conclusions** This meta-analysis, similarly to other meta-analysis in literature, supports the benefits of the LigaSure^{TM} vessel sealing system for haemorrhoidectomy: less tissue injury and postoperative anal pain, possibility of Day Surgery procedure, faster wound healing time and recovery. Large multicentre studies based on commonly accepted end points with a long-term follow-up are warranted to better compare the results of different techniques of haemorrhoidectomy.

Suggested readings

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POSTER

EMERGENCY COLORECTAL SURGERY IN OCTOGENARIANS: IS IT ACTUALLY AN ISSUE?

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Background Elderly individuals represent one of the most rapidly growing segments of the world's population; emergency surgery often represents an unfavorable condition and is associated with higher mortality rates especially in elderly patients presenting with emergent colorectal disease. Previous studies have addressed the outcomes of elderly patients undergoing a variety of elective surgical procedures, including colorectal resection. The aim of this study was to determine the short-time outcomes and predictive mortality factors in elderly patients following emergency colorectal resection with particular attention to octogenarians, who presented a 6-fold higher mortality rate than other patients. **Methods** We evaluated 355 patients undergone surgery in our tertiary level hospital Emergency Department for complication of colorectal disease from January 2007 to December 2009. The results were then analyzed in terms of morbidity and mortality in 30 days, stratified on the basis of patient's characteristics and pathology, timing and type of treatment. Univariate and logistic regression analysis were performed on risk factors considered predictive for morbidity and mortality. **Results** On 355 patients, 215 were older than 65 years were considered, ninety-three of whom were over 80 years of age. The global mortality rate was 16% and 30% in octogenarians, The difference in mortality rate between under and over 80-year-old patients resulted about 24% ($P < 0.001$). Only age over 80 years, ASA grade, colon ischemia ischemia and neurologic comorbiditiy resulted independent risk factors for both univariate and logistic regression analysis. Anastomosis dehiscence was added to them in resected patients. The morbidity rate was about 17%, no difference between the two groups was found.
Conclusions Our experience represents one of the largest retrospective series on nonelective setting for a variety of colorectal diseases in

elderly and especially in octogenarian patients. The results of the present study showed that the performing status and microvascular impairment in elderly are factors of major impact on mortality, particularly in octageniarians. Although outcomes in elderly group are perfectly in line with the best found in literature, the sixfold higher mortality rate of oldest patients imposes a great selection of those patients in which the prevention of death runs through an aggressive resuscitation and intensive postoperative care rather than prevention of emergency presentation.

DIASTATIC PERFORATION OF THE CAECUM IN A PATIENT WITH AIDS, DUE TO RHODOCOCCUS EQUI INFECTION

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Pulmonary location is the most common form of Rhodococcosis, and only a minority of patients also have localizations outside the respiratory tract. Our case report describes the first case of Rhodococcus Equi (RE) infection involving the colon and producing a solid lesion mimicking cancer and determining diastatic perforation of the caecum that made surgical treatment mandatory.

A 50-year-old, HCV, HIV positive, white female was admitted at the Emergency Ward of San Raffaele Hospital on March 2010, for onset of crampy abdominal pain and intestinal bleeding. The patients, whose last CD4 count was 62/ml, had been treated for pulmonary Rhodococcosis with extrapulmonary locations in the right thigh and in the right colon, diagnosed by an MRI of the abdomen and a colonscopy with biopsy consistent with RE localization. The patient initially underwent an abdominal CT scan which confirmed the presence of a solid lesion in the right colon surrounded by multiple adenopathies with a radiologic appearance of a colon cancer and a retroperitoneal solid nodule of 2 cm, adjacent to the right colon. She then underwent a colonscopy with biopsy that confirmed the colonic localization of RE. Haemocultures performed proved the haematic presence of RE; she began therapy with Tienam, Levoxacin, Vancomicin. Because of the sudden onset of acute abdominal pain, temperature and peritonitis the patient underwent an emergency laparotomy that revealed the presence of a caecal diastatic perforation with a solid mass in the right colon; a right hemicolectomy was then performed with removal of the retroperitoneal nodule. A sessile centrally excavated heteroplasia about 7 cm wide, macroscopically resembling a colon cancer, was found in the ascending colon. The histological exam showed malakoplakia due to RE; the retroperitoneal nodule proved to be another RE localization. The postoperative course was uneventful. The patient was discharged on postoperative day 8, and she is now well 7 months after surgery.

Thanks to important improvements made in therapeutical protocols, HIV infection has shifted from an acute and lethal disease to a chronic condition; this means that in the future, more expressions of a chronic bacterial infection like malakoplakia may be seen. In our case, the surgical treatment was mandatory for the colonic perforation causing peritonitis; however, in view of the poor response showed by colonic localization to standard antibiotic therapy, elective surgery should have been considered. In our case, AIDS did not prove to be a limit to perform major surgery.

Future follow-up protocols in patients with AIDS and pulmonary infections caused by RE will have to consider possible localizations of the pathology in organs outside of the respiratory system to prevent possible complications. Elective surgical treatment in patient with colonic lesions not responding to medical treatment may prevent possible complication like colon perforation.

EMERGENCY COLORECTAL SURGERY: WHAT RISKS, WHAT POLICY?

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Background The emergency treatment of diseases of the colon and rectum, especially those requiring surgery, always involves a certain amount of risk than one in elective conditions, despite advances in perioperative intensive care and surgery, this is related to a number of factors including the serious conditions of patients at admission, the advanced age, diseases occurred, the ASA score; all these represent the clinical variables listed in the literature as important risk factors. **Methods** Our study retrospectively analyzed patients admitted to the DEA II Department of Emergency of the Policlinico Umberto I in Rome for a complication of colorectal disease, in the period 2007–2009. Data on demographic features and the related clinical and therapeutic results were analyzed to understand the extent and possible relationship. **Results** In the last three years, 527 consecutive patients were observed and analyzed. A total of 464 were men (50.1%) and 263 women (49.9%). The average age was 67.3 (SD 16.7). Seventy percentage of patients examined was classified ASA score III, IV, V. Out of the 527 patients, 155 (29.4%) were treated conservatively, the remaining 372 (70.6%) were surgically treated. The timing of treatment was emerging in 172 (48.5%) patients, that is made within the first 12 h of admission and in 48 patients (13.5%) in emergency, within the first 72 h. Morbidity and postoperative mortality were 15.7% (56 patients) and 11.5% (41 patients), respectively, compared with a morbidity and mortality in general group (527 patients), 10.7% and 8.3%, respectively. The use of logistic regression applied to the group of patients surgically treated confirmed the independence of the ASA score, age (particularly after 77 years), and ischemia as a mode of presentation, such as independent risk factors for mortality, excluding factors such as sex, comorbidity, underlying disease and the timing, although these were significant at univariate analysis. **Conclusions** Our results showing a 11.5% mortality and morbidity 15.7% and 5.3% anastomotic dehiscence, are therefore in line with the results of the more selected and specialized studies in literature. The analysis of results obtained in 527 patients treated in emergency conditions for complicated diseases of the colon and rectum in the past three years shows that the training of emergency surgical team to treat "high risk" patients is a key factor to break down mortality and morbidity and is just as effective as the subspecialty in colorectal surgery.

SEVERE SEPTIC COMPLICATION AFTER COLONOSCOPIC PERFORATION: THE IMPORTANCE OF A PROMPT DIAGNOSIS

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Background Colonic perforation (CP) during diagnostic or therapeutic colonoscopy is widely recognized as one of the most serious complications. Occurring in fewer than 1 in 1,000 patients and more frequently associated with interventional and therapeutic endoscopic procedures, CP is related with a high rate of morbidity and mortality. Morbidity and mortality are usually related to the promptness of diagnosis and treatment. A delayed diagnosis (more than 12 h) with an extensive peritoneal contamination, associated with an advanced age of patients and severe comorbidities, frequently causes significant septic response and postoperative complications. Authors present their experience in surgical management of endoscopic CP (ECP) analyzing the factors influencing outcome and prognosis. **Methods** Eight cases of ECP, which occurred during last three years, were reviewed. The endoscopic procedure was executed elsewhere from our department. Surgery was performed by the same surgical team, and consisted of open or laparoscopic colon resection limited to the perforated tract, eventually protected by a loop ileostomy. Patients' characteristics, endoscopic information, intraoperative findings, management and outcomes were analyzed. **Results** The mean age was 65 years. The ASA status of 6 patients before endoscopy was II, in 2 patients was III. The indication for colonoscopy was in 7 cases the diagnosis of a rectal bleeding, and in 1 case the treatment of a colorectal anastomotic stenosis. The diagnosis of CP was made in more than 12 h from the colonoscopy in 3 cases (37%). Surgical treatment performed was an open colic resection in 5 cases, associated to a loop ileostomy in 2 cases, and in 1 case was a laparoscopic colic resection. The 3 patients operated more than 12 h from the ECP underwent to a major postoperative sepsis (morbidity rate of 37%) and required an intensive care unit recovery to treat a multiple organ failure (M.O.F.). One patient died on postoperative day 7 for a cardio-pulmonary failure (mortality rate of 12%); the other 5 patients had an uneventful postoperative course. Morbidity was associated only with the delay of diagnosis (more than 12 h, $P = 0.02$), and not with age, sex and ASA status. **Conclusions** CP is a rare but serious complication following colonoscopy. The 30-day morbidity and mortality rates of patients affected are 21–53% and 0–26%, respectively. The average length of hospital stay in CP patients is 1–3 weeks. Morbidity and mortality rate depends on age and medical conditions of patients, methods of CP management, experience of the care team and particularly the time of the diagnosis. Several studies agreed with the fact that a delayed diagnosis (after >12 h) is the main prognostic factor for morbidity and mortality in patients with CP following colonoscopy. Our experience highlights the importance of a prompt and early diagnosis of CP, in preventing severe septic response due to peritonitis and emphasize the implication of a straight patient follow-up in presence of dubious symptoms after colonoscopy.

PERFORATED DIVERTICULITIS: SURGICAL TREATMENT IN 15 CONSECUTIVE CASES

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Background Diverticular disease is a common condition in western countries. Diverticulosis of colon is a common condition that affects about 50% of Western population within 60 years and almost all age of 80 years. Only a small percentage of people with diverticulosis have symptoms, and only some of them will require intervention. Possible complications of acute diverticulitis are perforation, obstruction, fistula, bleeding. The ideal treatment is still controversial. This study presents our experience with perforated diverticulitis. **Methods** In our Emergency Department colorectal surgery unit we observed, from January 2008 to July 2010, 28 patients with perforated diverticulitis. All patients underwent X-rays and a CT scan of the abdomen. In all cases, the perforation was found to be in the left-sigmoid colon. Of the 28 patients, 13 were classified Hinchey score I-II (confined pericolic abscess or distant abscess) and were treated with conservative or minimally invasive therapy. The other 15 with Hinchey III-IV (generalized peritonitis caused by rupture of a pericolic or pelvic abscess, noncommunicating with bowel lumen or fecal peritonitis caused by free perforation of a diverticulum) underwent primary colonic resection-anastomosis and protective loop ileostomy. **Results** All patients were discharged by the eighth postoperative day without complications. Approximately 2 months later, we performed a barium enema study to evaluate the integrity and patency of the anastomosis and to exclude complications such as stenosis, fistulas and spillage of contrast agent. In 2 cases, it was observed a spreading of contrast. In these cases has been scheduled a further test about 3 months after surgery that showed no leakage of contrast. Thirteen patients have intestinal continuity restored two months after surgery. Two patients with leakage of contrast have delayed recanalization of about a month. In no case after second surgical intervention were reported complications. **Conclusions** We obtained good results, with a morbidity rate of 13.3%, there were no deaths. Based on our experience, we have evaluated the effectiveness of this intervention. In emergencies has been proven safe and without serious complications.

ACUTE COLONIC PSEUDO-OBSTRUCTION: THE ROLE OF SURGERY

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Background Acute colonic pseudo-obstruction (Ogilvie's Syndrome) is a rare condition characterized by acute colon distension without distal mechanical obstruction. Its pathogenesis is not completely understood but most likely results from an imbalance in the

autonomic regulation of colonic motor function resulting in colonic atony and dilatation. In over 90% of cases, Ogilvie's Syndrome is associated with an underlying medical condition or the postoperative state and in particular, it occurs in about 1% of hospitalized patients undergoing orthopaedic procedures. Early recognition and appropriate management are critical to minimizing high morbidity and mortality. In fact, the mortality rate is estimated to be 40% when ischemia and perforation occur. **Methods** A retrospective analysis was carried out at the Civitanova Marche Hospital. From 1990 to 2010, 26 patients were treated for severe Ogilvie's Syndrome: the male/female ratio was 1:2, and the mean age was 62 years (range 27–98 years). Patients presented abdominal distension, abdominal pain, nausea, vomiting; 4 of these also presented fever and leucocytosis. We submit the patients to plain abdomen X-ray and/or CT and/or water-soluble contrast enema. All these patients had large bowel distension without any evidence of mechanical obstruction. **Results** The first step was conservative treatment based on nasogastric decompression, correction of fluid and electrolyte imbalance, treatment of any underlying concomitant illness, endorectal flatus tubes. In 16 cases, this treatment was not successful, and we tried to use cholinergic agonists (intravenous neostigmine 2–2.5 mg in a single dose or to repeat just one more time and we found in 20% of cases a quick colonic decompression). An endoscopic therapy was performed in 6 cases. Surgical therapy was used in 4 patients, and we performed decompressive caecostomy. In one case of recurrence, after recanalization in a other Hospital after caecostomy, we performed loop ileostomy. Segmental or subcolonic resection was never performed. **Conclusions** Timing of surgical treatment of Ogilvie's Syndrome is discussed. Primarily, therapy is based on the traditional concept of bowel rest with or without pharmacological therapy associated. Laxative must be avoided, particularly lactulose, which provides substrate for colonic bacterial fermentation resulting in gas production. If there is no colonic decompression, colonoscopy can play an important role, but it should only be performed by experienced endoscopists considering the high risk of perforation. Surgical treatment is indicated when there is an endoscopy and conservative treatment failure and when there is suspicion of a complicance like ischemia and perforation. Patients with critical clinical condition, caecal diameter more than 12 cm, ischemic mucosa at the colonoscopy and those not improving and/or maintaining stable clinical conditions after 24–48 hours of supporting therapy are candidates to surgery. The choice of the surgical procedure depends on patient's general condition or intraoperative finding of caecal ischemia.
In our experience of uncomplicated acute pseudo-obstruction, we consider caecostomy a simple and safe procedure, it can be performed also under local anesthesia, and it permits anterograde wash-out of the colon (like Malone's procedure).

OBSTRUCTIVE ILEUS DUE TO A LOCALLY ADVANCED ANAL VERRUCOUS CARCINOMA: A CASE REPORT

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Anal verrucous carcinoma is an uncommon clinicopathological variant of low grade squamous cell carcinoma, also known as Buschke-Loewenstein tumour.

It is a slow-growing, expansive, cauliflower-like, destructive lesion that can extend to vulvar, vaginal region, rectum and bladder. No distant metastases usually occur. The onset of bleeding and persistent anal pain usually allows early detection of the tumor. Bowel obstruction due to wide anal verrucous carcinoma is a very rare event.

CASE REPORT: A 71-year-old man was referred to our department with diffuse, cramping abdominal pain of progressive onset, vomiting and severe constipation lasting for 6 days. He reported to have experienced similar episodes of intermittent abdominal pain, anal bleeding and persistent perianal pain due to long-standing hemorrhoidal disease over the last 2–3 years. Despite having been aware of the presence of hemorrhoidal disease and chronic constipation, he had not sought timely medical treatment. On physical examination, he had reduced bowel sounds, while the upper abdomen was distended with mild tenderness on palpation. The perineal examination disclosed the presence of a giant mass with convoluted grooves on a smooth surface completely obstructing the anal lumen. The laboratory findings including tumor markers carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA19-9) were within limits. However, the clinical findings suggested a diagnosis of giant anal cancer. The patient underwent abdominoperineal resection with bilateral inguinal node excision. Histological examination confirmed the diagnosis of anal verrucous carcinoma without lymph node involvement. Staging did not reveal any metastatic spread. No chemotherapy or radiotherapy was administered. The patient died 8 months after the operation of myocardial infarction without evidence of disease recurrence.
In conclusion Advanced anal verrucous carcinoma should be considered in the differential diagnosis for patients suffering from intestinal occlusion, and it may require extensively demolitive treatment.

LAPAROSCOPIC TREATMENT OF RECTAL CANCER

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Background In the last decade, laparoscopic surgery has become the standard treatment for gallbladder surgery, hiatal hernia repair and adrenalectomy; the laparoscopic approach to colorectal cancer surgery is not widely used outside high load surgical centres because is a complex procedure with a longer learning curve. The crucial point in the surgical treatment of rectal cancer stays on the total mesorectal excision (TME). **Methods**: From January 2007 to December 2009, two groups of patients who underwent surgery for rectal cancer without nodal involvement at pathological examination or distant metastases were retrospectively evaluated. The first group underwent video-assisted surgery (12 patients), the second group (9 patients) traditional open surgery. No patient received pre- or postoperative radiotherapy. The end points of our study were the integrity of the mesorectum at pathological examination and the local recurrence rate at 3 years. **Results** A successful TME was achieved in 10/12 patients in the laparoscopic group and in 4/9 in the open surgery patients. One patient developed a local recurrence after laparoscopic surgery and 4 patients after traditional surgery **Conclusions** Our results show that, after an adequate learning period, TME is feasible using a laparoscopic approach, leading to a low recurrence rate.

TREATMENT OF ANASTOMOTIC LEAKAGE FOLLOWING LOW ANTERIOR RESECTION WITH ENDO-SPONGE

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Background The most important surgical complication following rectal resection with anastomosis is symptomatic anastomotic leakage. The clinical leakage rate after anterior resection varies from 3 to 19% and is associated with a 6–22% mortality rate and a 10–100% risk of permanent stoma. Endo-SPONGE (B. Braun Melsungen AG, Germany) is a minimally invasive method of treating anastomotic leaks that are endoscopically accessible in the low rectal area. We present the video of a 70-year-old patient with an anastomotic leak following low anterior resection for rectal cancer successfully treated with Endo-SPONGE. **Methods** Between January 2007 and December 2009, 5 patients with anastomotic leakage following low anterior resection were treated with transrectal VAC treatment at the University Hospital Tor Vergata, Rome and were prospectively evaluated. Endo-SPONGE consists of an open pore sponge inserted into the cavity using a flexible endoscope. The sponge is cut to fit the size of leakage cavity and inserted in the cavity through a flexible endoscope using an overtube for the endoscope and a pusher to push the sponge system forward and place it in the cavity. The sponge is then connected through a Y tube with a controllable drainage system (Redyrob Trans Plus® bottle). Thus, it is realized a continuous drainage of the secretion, and the sponge cleans away the fibrin coatings, reduces in size and cleans the cavity. The sponge system is changed perennially every 48 h. The size of the new sponges applied during the treatment is reduced to fit the decreasing dimension of the cavity. When the cavity is approximately 1×0.5 cm large, the Endo-SPONGE treatment is ended.
Results The median age was 66 years (range 42–75 years). The diagnosis of anastomotic leakage was made after a median interval of 15 days (range 10–8 days) the median size of the cavity was 66×44 mm. In all patients, the fluid collection was drained, percutaneously in 4 patients and surgically in one patient who presented with a cavity of 80×55 mm. In all 5 cases, Endo-SPONGE was successful, in relieving patients from symptoms of infection; the treatment was performed on an outpatient basis. The median duration of therapy was 25 days (range 16–35 days), with a 8–15 sponge exchanges per patient. Median healing time was 46 days (range 32–60 days). No intraoperative complications were recorded. **Conclusions** In summary, considering the European experience, the Endosponge seems an effective minimally invasive procedure for the treatment of extraperitoneal anastomotic leakage without reintervention reducing morbidity and mortality among patients. However, a prospective large randomized multicentric trial comparing Endo-SPONGE and conservative treatment taking into account morbidity and quality of life of patients is warranted.

ENDO-SPONGE TREATMENT OF A PERSISTING PRESACRAL SINUS AFTER ANASTOMOTIC LEAKAGE FOLLOWING LAPAROSCOPIC TOTAL MESORECTAL EXICISION

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Colorectal anastomotic leakage remains one of the most feared complications after total mesorectal excision (TME). Endoscopic vacuum-assisted closure with Endo-SPONGE (B Braun Melsungen AG, Germany) has been proposed as a conservative treatment in patients without occurrence of generalized peritonitis. CASE REPORT: a 62-year-old man was admitted to our unit for a persisting presacral sinus after anastomotic leakage following TME for rectal cancer performed two years earlier. Despite ileostomy and the placement of a loose seton to drain the purulent cavity located in the presacral space, the sinus persisted. Thus, the patient underwent transanal insertion of Endo-SPONGE consisting of a polyurethane sponge connected with a vacuum system to stimulate the formation of granulation tissue and to obtain a constant drainage of the sinus. With the gradual reduction in the cavity, the Endo-SPONGE was reduced in size every 3–4 days when the Endo-SPONGE was exchanged. Fifteen endoscopic sessions were necessary to obtain the closure of the sinus. **In conclusion** Use of Endo-SPONGE treatment seems to be an effective method of avoiding surgical reinterventions for persisting presacral sinus after anastomotic leakage following TME.

TRANSVAGINAL SMALL BOWEL EVISCERATION AFTER RADICAL CYSTECTOMY

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Transvaginal small bowel evisceration is a rare event that requires urgent surgical intervention. It is associated with vaginal trauma, previous vaginal surgery, hysterectomy, prolapse repair or rarely with radical cystectomy. It can be preceded by a midline anterior enterocele.

A 95-year-old woman presented to our emergency department 28 months after a radical cystectomy and urethrectomy with bilateral urethrostomy for a stage G3 bladder cancer. She complained of severe abdominal pain with a 70-cm strangulated bowel loops evisceration through a defect in the anterior vagina. In the O.R., after a pubic-supraumbelical incision, we performed a resection of the necrotic bowel with a L-L manual ileo-ileal anastomosis. Pelvic floor reconstruction was performed anchoring the fundus of the uterus to the pubic periosteum. Finally, a vaginal exploration with synthesis of the anterior wall was executed. The patient had an uneventful postoperative course.

Incidence of postoperative pelvic organ prolapse (POP) after radical cystectomy is unknown. Most of the published work are inherent posthysterectomy cases. The small intestine ends up behind the pubis, taking the place of the bladder and the urethra. Radical cystectomy causes a wider pelvic floor dissection that may result in the interruption of the support system of the upper anterior vaginal wall, including the endopelvic and pubocervical fascia, the attachments of anterolateral vaginal sulci to the arcus tendineus, and the cardinal and pubourethral ligaments.

Average time for the presentation of a small bowel enterocele after radical cystectomy is 10.6 ± 6.5 months. Surveillance after pelvic surgery can prevent rupture, evisceration and incarceration of pelvic organs. Management of postcystectomy POP is challenging and surgical repair is difficult because of the loss of pelvic tissue and significant abdominal and pelvic adhesions.

Emergency management consists of stabilization, fluid therapy, wrapping the bowel with moist saline sponges, early antibiotic therapy, radiographs to rule out foreign bodies and prompt surgical intervention. Laparotomy, laparoscopy or perineal approach have been described by various authors. Laparotomy allows full inspection of the entire intestine and its mesentery. Vaginal approach may be suitable for patients with minimal abdominal signs and an easily reducible and viable intestine. Laparoscopic repair of the defect has been performed in few cases. Closure of the defect can be achieved with simply

interrupted monofilament absorbable suture material. Pelvic floor reconstruction may be achieved using a mesh. It can be fixed to different structures: the rectal promontorius in one side and uterus if present, or isthmus and vaginal fundus. Several closure techniques are possible using a perineal approach: a transvaginal sacrospinous ligament colpopexy; an autologous fascia lata graft; or an intraperitoneal suspension of the vaginal vault to the uterosacral ligaments with fascial reconstruction of the anterior and posterior vaginal wall.

In our experience, an abdominal approach was chosen to perform a safe bowel resection. A surgical repair with hystero-pubopexi and perineal colpocleisis was found to be feasible and safe.

SURGICAL TREATMENT OF COMPLEX PERINEAL TRAUMATIC INJURIES

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Background Rectal, perineal and anal injuries are uncommon, and their treatment is not standardized; therefore, several treatments have been proposed. The aetiology is multiple and includes gunshot wounds and sexual violence. Often, the consequences of perineal trauma severely impair the quality of life of such patients. **Methods** From 2008 to 2010, in the Surgical Unit "Chirurgia Generale V.Bonomo", University of Bari, 4 patients were treated after perineal impalement injuries (3 car accidents, 1 accident at work). At admission, Ct scans and blood tests were performed, and all patients underwent surgery within 12 h. **Results** In 3 patients, a temporary colostomy and perineal wound debridement and dressing were performed within 12 hours. In the fourth patient, a primary repair of the perineal wound was attempted, but subsequently, a perineal wound infection occurred and a diverting loop colostomy was performed. **Conclusions** In our experience, early surgery with a temporary colostomy is advisable in order to achieve better perineal wound healing. The primary repair of the perineal wound without faecal diversion is not a safe procedure in these circumstances, because it is associated with a high risk of infection which requires a second surgery with the construction of a colostomy.

SEVERE RECTAL BLEEDING FOLLOWING STAPLED HEMORRHOIDOPEXY: AN UNUSUAL LATE POSTOPERATIVE COMPLICATION

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Stapled hemorrhoidectomy (SH) has become a widely recognized and accepted procedure for the treatment of symptomatic hemorrhoids. However, SH can be followed by many complications including the feared rectal bleeding. Rates of rectal bleeding after SH range between 1% and 11%. Bleeding usually occurs either immediately or between the 4th and 10th days after surgery while bleeding occurring later is uncommon. Furthermore, late bleeding after SH has been described only as mild event. We report a case of severe late rectal bleeding following SH.

CASE REPORT: a 30-year-old male was admitted to our Unit because of severe rectal bleeding that began 29 days after he underwent SH for 3rd degree hemorrhoidal disease. The surgical procedure was uneventful, and the patient was discharged on postoperative day one with hemoglobin (Hb) and hematocrit (Hct) values within normal limits. In the postoperative period, the patient daily took bulking agents having easy and painless defecations. After 10 postoperative days, at the first ambulatory follow-up, rectal digital examination and anoscopy were within normal limits; therefore, the patient returned to his work as bank clerk the next day. Nevertheless, on postoperative day 29, he had spontaneous severe rectal bleeding followed by a strong feeling of weakness and severe pallor, so he was hospitalized: at laboratory findings, Hb was 7.3 g/dl and Hct was 20.4%; therefore, he had a blood transfusion. Proctoscopy revealed a bleeding granuloma near the line of staples at the sites of the reinforcing stitches. Bleeding was successfully stopped using endoscopic injection of 0.9% NaCl plus epinephrine (1:10.000 solution) and bipolar electrocoagulation. The patient was discharged two days later without further clinical signs or laboratory findings of bleeding.
In conclusion Stapled hemorrhoidectomy may be complicated by severe late rectal bleeding.

PAIN IN PROCTOLOGICAL SURGERY. FROM SCHOPENHAUER TO VAS

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Background This work is based on the evaluation of proctological surgery pain, on the expectation before proctological surgery as well as postoperative perception.
Methods The present investigation consists of a questionnaire with multiple choice questions given to 100 patients who underwent proctological surgery (haemorrhoidal, anal fissure and fistula). Some questions were asked before the operation and some after that. **Results** Adequate pain management after proctological surgery is essential for safe discharge home, especially after a "day surgery" procedure. None of our patients delayed discharge for unrelieved pain. Almost all patients in the study experienced pain in their lives: 30% surgery pain, 70% suffered acute and chronic medical pain. The patients who felt both surgery pain and chronic pain remember only the second one. About their pain, threshold patients represent the Gaussian distribution of natural phenomena. Actually, 60% of patients reported pain but most (83%) had mild pain (VAS 1–3), and the intensity of pain was less than or equal to what was expected in 83% of patients. Patient satisfaction was high and the 100% would choose the same surgical procedure in the same hospital. But the message that comes out the hospital, in the community, was that patients felt pain, mild and moderate, after proctological procedure. One important step is that the nurse must register the intensity of pain in the medical record; if the pain symptoms reported are real, not invented by the patient, and need to be treated. Is essential the correct patient information about postoperative pain and the relative medication because we noted that people ask for analgesic drugs when pain is too high to reach a good relief, because patients try to resist pain, as challenge, or they fear the collateral effects of medications. **Conclusions** Also, nurses and doctors play a role because they usually underestimate the level of patient pain and, at the end use an inadequate analgesic dosage. Is mandatory to get better postoperative pain: treat pain for some days (our experience 5 ± 1), giving medical home prescription and, after surgical procedure, prescribe drugs at fixed hours or, better continuos infusion.