

International Society of University Colon and Rectal Surgeons (ISUCRS)  
Interim meeting in Vilnius 2013

# World Colorectal CONFERENCE

May 31 – June 1, 2013  
Vilnius, Lithuania

---

## 1.

---

### Laparoscopic polypectomy: single institution experience

Audrius Dulskas, Narimantas Evaldas Samalavicius

*Center of Ocosurgery, Oncology Institute of Vilnius University,  
Santariskiu 1, Vilnius, Lithuania*

#### Background/Aim

Large colonic polyps or polyps that lie in anatomical locations that are difficult to access at endoscopy may not be suitable for endoscopic resection without an increased risk for perforation and therefore may require operative procedures. In such circumstances, laparoscopic resection (colotomy or partial bowel resection) represents a minimally invasive alternative.

#### Methods

Between April 2006 and January 2013 total of 273 laparoscopic colorectal operations at the Institute of Oncology, Vilnius University, Lithuania were performed 32 of them – laparoscopic polypectomies for polyps which could not be treated by endoscopy due to size, location, and/or risk of complications. Demographic data, past surgical history, preoperative polyp morphology and histology of the biopsy, type of surgery, length of postoperative stay, complications, final pathology and stage of cancer (if present) were recorded.

#### Results

Thirty-two consecutive patients (15 male and 17 female) with a mean age of  $65 \pm 9.1$  (range from 50 to 83 years) underwent elective laparoscopic polypectomy. For benign preoperative pathology – 27 (84.4%) patients and 5 (15.6%) – for Ca in situ. 12 (37.5%) patients had multiple polyps (2 or more), 2 (6.3%) patients had previous abdominal surgery. 10 (31.2%) patients had comorbidities: 8 of them (24.9%) – cardiac, 2 (6.3%) – diabetes. Laparoscopic mobilization of colonic segment and colotomy and removal of polyp was performed for 10 (31.2%) polyps. Laparoscopic segmental bowel resection was performed in 22 (68.8%) patients: anterior rectal resection with partial TME – 10 (31.2%), left hemicolectomy – 6 (18.8%), sigmoid resection – 3 (9.4%), ileocaecal resection – 2 (6.3%) and resection of transverse colon in 1 (3.1%). Mean postoperative hospital stay was  $6.1 \pm 2.5$  days (range from 2 to 14 days). There were three complications (9.4%) – urinary tract infection in two patients and partial ileus – in one. All patients recovered after conservative treatment. There were no deaths or conversions. Mean polyp size was  $3.6 \pm 2.2$  (range from 1 to 10 cm). Final pathology revealed polyps (juvenile and hyperplastic = 2), tubular ( $n = 4$ ), tubulovillous ( $n = 16$ ), Carcinoma in situ ( $n = 8$ ) and pT1 invasive cancer ( $n = 2$ ). Invasive carcinoma not identified at colonoscopy and biopsy was found in 2 polyps (6.3%) – both in tubular adenomas. 2 patients underwent laparoscopic left hemicolectomies in 14 and 10 days due to T1 cancer after laparoscopic colotomy and polypectomy.

## Conclusions

For the management of endoscopically unresectable polyps, laparoscopic polypectomy is currently the technique of choice. In addition to the benefits of minimally invasive surgery, in the hands of an experienced surgeon it achieves results comparable with those of open surgery.

**Key words:** colectomy, colorectal polyp, laparoscopic surgery.

---

## 2.

---

### Induction therapy of colorectal cancer liver metastases: current evidence and VUOI experience

Edita Baltruškevičienė, Monika Drobniėnė

*Vilnius University Oncology Institute*

#### Background

Liver is the most common and often the only location of colorectal cancer metastases. For patients with liver limited disease multimodality treatment combining intensive chemotherapy, radical resection, ablative techniques enables to reach 32% ten year survival. When treating non resectable for patients of metastatic colorectal cancer median overall survival reaches only two years. Unfortunately only 10-20% of liver metastases are initially resectable.

**Results** Induction therapy is being used to enhance respectability. Ideal induction therapy regimen must have high response rate because it directly influence resection rate. Chemotherapy duplets or triplets in combination with biologic therapy are mostly used regimens for induction therapy. Response rates of such combinations differ from 12 to 70%. The choice of regimen is done regarding biological markers such as KRAS status, patient condition. The most effective regimen for wt KRAS patients according CELIM trial is FOLFIRI/FOLFOX with cetuximab showing response rate up to 70% and increasing resection rate from 3 to 60% with acceptable toxicity profile.

#### Conclusion

These results reflect in our clinical practice. We had 3 patients receiving FOLFIRI with cetuximab. The regimen was safe, all the patients achieved partial response and all were referred for curative resection. Response partial radiological in one

patient turn out to be complete pathological response with no vital cancer cells in fibrotic and necrotic mass. Cetuximab with chemotherapy is optimal induction treatment option for wt KRAS colorectal cancer patients with liver metastases.

**Key words:** colorectal cancer, liver metastases, therapy,

---

## 3.

---

### Colorectal cancer and liver metastases: possible strategies

E. De Raffe, M. Mirarchi, S. Vaccari, S. Palumbo, B. Cola

*Department of Emergency, General Surgery and Transplants. S.Orsola University Hospital of Bologna, Bologna, Italy*

#### Background/Aim

Colorectal cancer (CRC) is still one of the leading causes of cancer-related death in the Western countries. Liver metastases (CRLM) are present in nearly 15 to 25% of individuals with newly diagnosed colorectal cancer and will develop in up to 50% of patients during the course of their disease. When liver metastases are considered resectable after an adequate preoperative evaluation, radical liver resection still remains the only potentially curative therapy. More recent series describe 5-year overall survival rates of 37% to 58% after hepatectomy. The current criteria focus on what should be left after liver resection: at present, the definition of resectability includes a complete resection with clear surgical margins on microscopy (R0 resection), without compromising postoperative liver function because of the insufficiency of either the remaining liver volume or biliary and venous vascularization and drainage.

#### Methods

The systematic use of intraoperative ultrasonography (IOUS) to evaluate the tumour-vessels relationship and to guide hepatic resection has been demonstrated to decrease the extent of the liver resection both for primary and metastatic liver tumours without prejudice on oncological radicality: the extensive use of IOUS guidance during liver surgery permits to minimize the resection margins, to avoid the need for strict anatomic approaches and to reduce the rate of major hepatectomies without increase of local recurrence rates in the long-term follow-up. In case of vascular invasion of the right

hepatic vein or the middle hepatic vein, more conservative procedures have been described as an alternative to right hepatectomy or trisegmentectomy, based on the extensive use of colour Doppler IOUS and sonographic guidance of parenchymal resection. One-stage IOUS guided liver resection has been proven to be effective also in selected patients with multiple bilobar CRLM usually considered for portal vein ligation/embolization and subsequent major hepatectomy or for two-stage hepatectomy.

In patients with large synchronous CRLM and uncomplicated primary cancer, the reversal of the traditional strategy has been recently proposed, to avoid the risk of progression of the liver tumour to unresectability. Proponents of staged strategies advance evidence for increased morbidity and mortality associated with simultaneous procedures.

### Strategies

In recent years however an increasing number of studies have shown good results for elective simultaneous procedures, which have the striking advantage of avoiding a second laparotomy along with the opportunity of an earlier initiation of adjuvant therapy, even though the cumulative risks of the two procedures need to be adequately considered. As a matter of fact, the paradigm for the surgical management of synchronous CRLM has begun to change, and the planned extent of hepatic resection seem to represent the most important determinant of whether colorectal and hepatic procedures should be performed simultaneously.

### Conclusions

Our experience in this field shows that simultaneous colorectal and liver resection represent an adequate surgical strategy in selected patients with resectable colorectal cancer and resectable synchronous CRLM. A staged approach is still advisable in patients requiring urgent colorectal resection because of complicated CRC, while all the other patients should be theoretically considered for simultaneous resection: in these cases a systematic approach to CRLM which considers the need of reducing the extent of hepatectomy while preserving oncological radicality with the use of intraoperative ultrasonography should represent the best option to reduce the perioperative risks.

**Key words:** Colorectal cancer, liver metastase, surgical strategies

## Constipation: the combined treatment of east and west

S. Q. Ding, Y. J. Ding

*Colorectal section, Nanjing TCM hospital, Nanjing, Jiangsu, China*

### Background /Aim

To show the constipation multidisciplinary and integrated treatment in China pelvic floor center practice.

### Methods

According Nanjing pelvic floor center database from June 2008 to June 2011, 1045 constipation patients got integrated treatment protocol enrolled including diet, psychological and psychiatric treatment, pelvic floor biofeedback therapy, Chinese medicine, Acupuncture or operation etc. To investigate the symptoms, treatment protocols, initial results and follow up etc.

### Results

Patients usually abused in cathartic or enema with poor quality of life, routine practice was usually invalid. Multidisciplinary rehabilitation team work were needed, integrated treatment protocol did according to the diagnosis and treatment flowchart. The results will be evaluated by Patient Reported Outcome questionnaires and physiology tests respectively.

### Conclusions

Integrated multidisciplinary treatment improved success rate. According to research work, Acupuncture improved intestine motility in slow treatment constipation, sensation and muscle control in pelvic floor relaxation of outlet obstructed constipation, pelvic floor biofeedback therapy improved muscle variability, endurance and rectal sensation in dysnergic defecation, Chinese herb's advantage was in laxative withdraw, motility promotion and body constitution modulation. Operation just worked in very small percentage of rectocele, slow transit constipation and pelvic floor organ prolapse relevant constipation.

**Key words:** constipation, combined treatment

## 5.

## Dyssnergic defecation: diagnosis and treatment

S. Q.Ding, Y.J.Ding

*Colorectal section, Nanjing TCM hospital, Nanjing, Jiangsu, China*

### Background/Aim

Outline dyssnergic defecation diagnosis and treatment in China pelvic floor center practice.

### Methods

According Nanjing pelvic floor center database from June 2008 to June 2012, 1.650 constipation patients enrolled, according to Rome III criterion, dyssnergic defecation accounts for 45.4%, which divided into 4 subsets according to manometry which provided more information and painless than defeography, needle EMG etc. Characteristic symptoms of patients usually combined upper GI, psychologically, Irritable bowel syndrome etc which should be evaluated before treatment. The management protocols including diet, laxative, psychological or psychiatric consultation, BTX injection, pelvic floor biofeedback, Chinese medicine, acupuncture etc should be investigated and individualized.

### Results

Symptoms with digital examination and manometry are preferred in diagnosis dyssnergic defecation, the success rate is 85% while 40%, 62% and 89% respectively. Biofeedback is in first line recommendation, it is sufficient in friendly compliance patients. The success rate is 65%, almost 3-4 sessions. BTX injection can shorten treatment course into 1-2 sessions. Chinese medicine is helpful in laxative quitting, bloating, loss of appetite etc. Acupuncture is practically helpful in motility and anxiety insomnia. Operation has no requirement.

### Conclusion

Combined and customized treatment protocol is the key.

**Key words:** dyssnergic defecation, diagnosis, treatment

## 6.

## Stimulated Graciloplasty following Abdominal Perineal Resection (APR)

Francis Seow-Choen

*Fortis Colorectal Hospital, Singapore*

### Background/Aim

Abdominal Perineal Resection (APR) is still the standard of care when rectal cancers are very low and not responsive to radio-chemotherapy. However this entails a removal of the anus with the construction of a permanent stoma. Long or even short term stomas are associated with physical, psychological and social consequences. Pickrell was the first to use the gracilis for treatment of anal incontinence in 1952 and Simonsen used it first to restore anal function after APR. The Gracilis however is a skeletal muscle and prone to fatigue and therefore cannot be relied upon to maintain continence 24 hours a day seven days a week. Electrical stimulation of this muscle had been shown to convert the muscle to a slow twitch muscle enabling titanic contraction which in turn can be turned off by a switch.

### Results and Conclusion

We proposed and have used the stimulated graciloplasty following APR three years or so after the initial surgery when the risk of recurrence is low. Such patients who are still motivated to regain perineal annual function should be offered stimulated graciloplasty as some will have good or acceptable results and thereby improve their lives.

**Key word:** graciloplasty, abdominal perineal resection (APR)

7.

## Laparoscopic colorectal cancer surgery in Japan: Short-term clinical outcomes from a large scale randomized controlled trial to evaluate laparoscopic and open total mesocolic excision for stage II–III colorectal cancer

F. Konishi, S. Yamamoto, M. Inomata, M. Watanabe, S. Kitano

*Japan Clinical Oncology Group: JCOG 0404*

### Background/Aim

In Japan laparoscopic colectomy for cancer started in 1992, and the standardization of the technique was established in 2002 by the working group of the technique. The nationwide qualification of laparoscopic colectomy skill started in 2004 (Japan Society for Endoscopic Surgery: JSES). In the same year we started a large scale randomized controlled trial to confirm the non-inferiority of LAP to OPEN in terms of overall survival with less frequent post-operative morbidity. The benefits of laparoscopic surgery (LAP) in comparison with open surgery (OPEN) have been suggested by several RCTs in the world. However, the long-term survival after LAP for advanced colorectal cancer (stage II & III) requiring complete mesocolic excision is still unclear.

### Methods

The primary analysis is planned in 2014, and short-term outcomes including post-operative complications are presented here. Inclusion criteria were as follows: Tumor located in cecum, ascending colon, sigmoid colon or rectosigmoid, pre-operatively T3 or T4 (without involvement of other organs), N0-2 and M0, and tumor size < 8 cm. In all the cases D3 lymph node dissection (total mesocolic excision) was performed. Primary endpoint was overall survival. Secondary endpoints were relapse-free survival, short term clinical outcomes, incidence of adverse events and conversion rate. Sample size was 1050.

### Results

Actual accrual was carried out from October 2004 to March 2009. 1,057 patients were recruited for the JCOG 0404 study, and short-term clinical benefits of LAP were demonstrated. Conversion rate was low (5.4%). Postoperative

grade 3/4 complication rate was similar in both groups, the amount of intraoperative bleeding and rate of wound related complication were significantly lower in LAP than in OPEN, and postoperative hospital stay was significantly shorter in LAP than in OPEN.

### Conclusion

Short-term results in this study were superior in laparoscopic surgery than in open surgery. Long-term oncological results will be available in 2014.

**Key words:** laparoscopic, colorectal cancer, surgery

8.

## TEM of rectal adenomas: short-term and long-term outcome

Marija Kostiuk, Narimantas Evaldas Samalavicius

*Clinic of Oncosurgery, Oncology Institute of Vilnius University, santariskiu 1, Vilnius, Lithuania*

### Background/Aim

TEM (transanal endoscopic microsurgery) is an alternative method for the treatment of rectal tumors. Since its introduction in 1983, transanal endoscopic microsurgery (TEM) has emerged as a safe and effective method to treat rectal lesions including benign tumors, early rectal cancer, strictures and some other conditions. The aim of the study was to evaluate short term and long term outcome of TEM for rectal adenomas. Short-term outcome evaluation included surgical complications, hospital stay and other parameters, including resection margins and fragmentation of the specimens. Long-term outcome included recurrences, late complications and anal continence (FISI (faecal incontinence severity index) was used) 1 year after TEM.

### Patients and methods

We included all 65 patients with rectal adenomas treated at the Oncology institute of Vilnius University from IMPLEMENTATION OF THIS TECHNIQUE 1-09-2009 to 31-12-2012 using TEM. On final histology, 16 adenomas showed Ca in situ (24,6 %). The mean age of patients was 65 (std. deviation 8.875, min. 47, max 85). 32 patients were males and 33 – females. 14 tumors were located in the lower third of the rectum, 35 in middle third, 16 in upper third.

## Results

In 63 cases tumor was removed en bloc, in 2 cases specimen was fragmented. In other 5 cases histological margins of the specimen were endangered. To evaluate long-term outcome we included patients treated using TEM from 1-09-2009 to 31-12-2011. 43 patients were legible: 9 of them were lost to follow up, 3 were died prior to the study (prior to 2013-02-07) from the reasons unrelated to TEM. Overall 31 patients were questioned. 22 patients had no signs of fecal incontinence (FISI 24 points), 5 patients had mild disorders (23 points), 3 patients suffered of average incontinence (from 21 to 17 points), and only 1 had severe incontinence (10 points). Only in one case recurrence was recorded (3.23%) from 31 patients followed up for 12 months or more, and was successfully treated by endoscopic polypectomy.

## Conclusion

TEM is an effective method for the treatment of rectal adenomas with excellent immediate surgical results and low recurrence rate. However, the probability of fecal incontinence after this procedure should not be underestimated.

**Key words:** rectal adenomas, TEM treatment

---

## 9.

---

## Survival after Induction Chemotherapy Followed with Adjuvant Chemotherapy and Radical Surgery for Initially Unresectable Rectal Cancer

Nasser Al-Sanea

*Section of Colon & Rectal Surgery, King Faisal Specialist Hospital & Research Center-Riyadh, Saudi Arabia*

### Background/Aim

To identify the characteristics of patients who can achieve cure after radical resection for locally advanced non metastatic rectal cancer (T4 N0-2 M0).

### Methods/Patients

Patients who underwent curative radical treatment for non-metastatic locally advanced rectal cancer T4N0-2M0 from 2000 till 2009 at King Faisal Specialist Hospital and Research Center-Riyadh.

The colorectal database at King Faisal Specialist Hospital and Research Center-Riyadh was reviewed for all rectal cancer patients with the pathologic stage of T4 N0-2 M0 who underwent curative treatment. Data collected included demography and clinical, radiologic and pathologic characteristics. Treatment, local recurrence, distal metastasis and survival data were also collected.

## Results

There were nineteen patients, 13 women and 6 men. The median age at presentation was 52 years (range: 29-80), All patients were deemed unresectable at presentation and had at least one pelvic organ involved outside the rectum. They were subjected to 6 cycles of XELOX (Capecitabine and Oxaliplatin) followed up with neoadjuvant chemoradiation using Capecitabine. Abdominoperineal and anterior resection were performed in 10 & 9 patients respectively. All proved to be T4 N0-2 on histology. Complete surgical resection was achieved and documented by pathology in 15 patients (R0). Non favorable prognostic pathologic signs (mucinous, signet ring cells, lymphovascular or preneural invasion, poor differentiation) were noted in 9 patients. The median diameter of the tumors was 3.5 cm (range, 2-9cm). There was no case of complete pathologic response to neoadjuvant chemoradiation treatment. Five patients had more than one organ invaded by tumor. All patients received adjuvant chemotherapy in the form of XELOX.

Overall 3-year survival rate was 73%, disease-free 3-year survival rate was 36%. Both were significantly lower in patients with non-favorable pathology ( $p < 0.0003$ ). Reduction in size by 30% after induction chemotherapy is an indicator of improved survival ( $p < 0.05$ ). Survival was not significantly different between R0 and R1 groups of patients with similar pathology.

## Conclusion

Non-favorable pathology is associated with lower overall & disease free survival regardless of completeness of resection.

**Key words:** unresectable rectal cancer, chemotherapy

## 10.

**Natural history of sigmoid diverticulitis**

Pascal Gervaz

*Geneva Medical School, Geneva, Switzerland*

**Background/Aim**

The natural history of sigmoid diverticulitis is poorly investigated. Relevant information is restricted to population-based or retrospective studies. We prospectively assessed the risks of recurrence and complications in a cohort of patients who had a first episode of simple diverticulitis

**Methods**

A prospective cohort study of 285 patients who were admitted between January 2007 and December 2011 for a first episode of simple sigmoid diverticulitis documented with computed tomography (CT) scan. After successful medical management of the first episode, follow-up was conducted through yearly telephone interviews. A Cox proportional hazard regression was performed to model the impact of various parameters on eventual recurrences and complications.

**Results**

46 patients (16.4%) experienced a second episode of diverticulitis: 1- and 3-year recurrence rates were 20%, and 31% respectively. 6 patients (2.1%) subsequently developed complicated (Hinchey I-IV) recurrent diverticulitis, and 4 patients (1.4%) underwent emergency surgery for peritonitis (Hinchey III-IV). In multivariate analysis, an elevated serum C-reactive protein (CRP) during the first attack was correlated with the risk of recurrence: patients with a CRP level >240 mg/L had a 22% recurrence rate, while those with a CRP <240 mg/L had a recurrence rate of 8% at 6 months (log rank test,  $p=0.0001$ ).

**Conclusion**

This prospective study demonstrates the benign nature of simple sigmoid diverticulitis. Overall recurrence rate in this series is 16%. Patients with CRP>240 mg/L are three times more likely to recur. The risk to develop a complicated second episode (and for emergency surgery) is less than 2%. (Trial registration number NCT01015378).

**Key words:** sigmoid diverticulitis, history

## 11.

**Serrated adenoma and risk of Colorectal Cancer**

Akram Pourshams

*Tehran University of Medical Sciences, Digestive Disease Research Center, Shariati Hospital, Tehran, Iran*

**Background/Aim**

Colorectal Cancer (CRC) is the second most common fatal malignancy. Until recently it is assumed that almost all CRC arise from adenoma formation via the suppressor pathway initiated with a mutation of the APC gene leading to microsatellite stable carcinomas that has been the target of screening and prevention programs to date. It is now clear that this pathway accounts for only 60% of CRC.

In 1990, Longacre and Fenoglio-Preiser proposed the term *serrated adenoma* for polyps showing a mixture of features of hyperplastic and adenomatous polyps. There are evidences that approximately 35% of CRC arise via the serrated pathway developing from the precursor lesion known as the sessile serrated adenoma / polyp (SSA/P). SSA/P leads to carcinomas with extensive CpG island promoter methylation (CIMP+) which can be either microsatellite instable high or microsatellite stable. Now it is recognized that CRC comprises a family of diseases with various molecular pathways. CIMP+ microsatellite instable could be a rapidly progressive pathway, much more than carcinogenesis via the conventional APC pathway, so it sounds that SSA/P will require a different screening strategy from that used for conventional adenomas.

Another concerns regarding SSA/P are;

- a- SSA/P is a very subtle lesion and may be difficult to identify on endoscopic examination, especially for who are not familiar with subtle changes that might indicate the presence of a SSA/P.
- b- Terminology issues using to describing SSA/P.

**Conclusion**

In this review the various pathways to CRC with emphasis on the serrated pathway, update on the terminology for SSA/P and the implications of the serrated pathway for CRC screening programs will be discussed comprehensively.

**Key words:** serrated adenoma. risk of colorectal cancer

## 12.

## Is there a place for selective use of neoadjuvant radiation without chemotherapy?

J.A. Reis Neto, J.A. Reis Junior, O. Kagohara & J. Simões Neto, Sérgio O Banci, Luciane H. Oliveira

*Catholic University of Campinas*

*Clínica Reis Neto*

### Background/Aims

The prognosis on treatment of the cancer of the rectum has changed in the last fifteen years. The main cause for those results is the decrease in the incidence of local recurrence. Neoadjuvant radiotherapy has been used combined with chemotherapy for cancer of the lower rectum, stage III and in some cases of stage II tumours. Neo-adjuvant radiotherapy alone could be selected for patients stage I and elderly patients.

### Methodology

Between 1978 and 2012, a total of 75 patients with cancer of the lower rectum classified as Stage I tumours (T1/T2 NoMo), and a group of 10 patients, over 90 years, were treated by pre-operative radiotherapy and selected for this study. There was no gender, race and age distinction. The same protocol was used in all the patients – 4500 cGy, 200 cGy /day, during 4 consecutive weeks (anterior and posterior pelvic fields) by means of a Linear Megavoltage Accelerator (25 MeV). Preoperative dosage of CEA, after cancer diagnosis, colonoscopy and abdominal tomography were performed in all the patients to stage the tumor. Endorectal ultrasound was performed in all patients treated after 1993. Pelvic MR was performed in all patients after 1998. Size and infiltration of the tumor were thus evaluated before and after the irradiation. Every patient had biopsies (a minimum of 10) of the tumor taken at the time of the diagnosis and another 4 to 8 weeks after the completion of the radiotherapy. There were number of undifferentiated cells exhaustively noted and the results compared, in both biopsies. Broders' classification was equally observed and the results obtained, before and after radiotherapy, registered and compared.

### Results

From the 75 patients classified as stage I; 27 were T1NoMo and 48 were T2NoMo. All the patients classified as stage I, T1NoMo had no residual tumour detected after irradiation

therapy. Of the 48 patients classified as stage I, T2NoMo; 40 had no residual tumour after irradiation; 8 were submitted to FTLE (total local excision). One had recurrence of the tumour 3 years after the surgery. As a fact, the variation in the number of undifferentiated cells before and after irradiation was significantly proved; the number of tumors with a high grade of undifferentiated cells shows a negative variation after irradiation showing a significant statistical reduction in the number of undifferentiated cells. At the same time, as a corollary, the number of tumors with a low grade of differentiated cells at diagnosis shows an effective increase after irradiation, with a positive variation. Statistical analysis of the whole group showed that preoperative radiotherapy does decrease frequency of undifferentiated cells. The results observed in this study confirmed that after the irradiation an involution of the tumor size and volume occurred, detectable not only by endorectal ultrasound (ERUS), but also by digital and endoscopic examinations. Of the 27 patients with stage I tumors classified as T1 none needed further treatment; the tumor disappeared after the radiotherapy. Of the 48 patients with stage I T2 tumors only 8 needed further surgery – full local total excision. Of the 10 patients aged 90 years, only one had to be submitted to surgery.

### Conclusion

Reoperative radiotherapy is really effective in reducing the number of undifferentiated cells and in diminishing the tumor volume and the carcinomatous infiltration of the rectal wall for patients stage I tumours and for aged patients.

**Key words:** rectal cancer, cancer of the lower rectum, irradiation, preoperative radiotherapy, local recurrence, mortality, survival

## 13.

## PPH is it a real gold standart for hemorrhoidal disease?

Ricardo Escalante

*Universidad Central de Venezuela, Loira Medical Center, Caracas, Venezuela*

### Background/Aim

Most patients with hemorrhoidal disease may be treated conservatively along the years. Several surgical options have

been proposed, including closed open and semiclosed hemorrhoidectomy, radiofrequency (LigaSure), stapled haemorrhoidopexy (PPH) with or without excision of anal tags, and doppler hemorrhoidal artery ligation. In our private center we consider the circular stapled mucosectomy as the standard therapy for the treatment of symptomatic third-degree haemorrhoids and mucosal prolapsed.

### Methods/Patients

Randomized prospective trials and meta-analyses have been carried out with the aim of finding the gold standard operation. PPH carries less postoperative pain and a shorter convalescence than conventional procedure. On the other hand, while carrying a higher rate of complications, it may be responsible of the so-called "PPH syndrome", consisting of proctalgia, tenesmus and urgency.

### Results

Occasional recto-vaginal fistulas have been described after PPH, if not even of rectal perforation and other life-threatening complications.

### Conclusions

We review the different alternatives in the surgical management for hemorrhoidal disease. Some guidelines recommend a tailored surgery, i.e., the use of different procedures according to the grade of haemorrhoids, which suggests that patients should be operated by a specialist colorectal surgeon, able to perform different surgeries and to deal with complications and failures.

**Key words:** hemorrhoidal disease, PPH, gold standart.

---

14.

---

## HAL RAR (Hemorrhoidal Arterial Ligation – Recto Anal Repair) in the treatment of hemorrhoidal disease

Guillermo Rosato\*, Pablo Piccinini\*\*

\*Hospital Universitario Austral – Buenos Aires- Argentina

\*\*Hospital Universitario CEMIC – Buenos Aires –Argentina

### Background/Aim

Hemorrhoids are the most common pathology of coloproctology consultaion. Between 10-20 % if this patients may

require a surgical approach. Depending on the type of prolapse, hemorrhoids are classified into four grades. After failure of conservative measures, symptomatic or prolapsed hemorrhoids mainly grades iii and IV may require surgery, to achieve curative treatment.

Surgical treatments options for hemorrhoids have expanded since Milligan –Morgan, Ferguson and Park's operations. Technology had made possible the advent of new procedures with different kind of instruments. Hemorrhoidal surgery has an incidence of early (pain, post op bleeding, king tag swelling, urinary retention) and late (anal stenosis, formation of skin tags, anal fissure, recurrence) complications shared almost by all procedures.

HAL (Hemorrhoidal Artery Ligation), for the first time, based upon an understanding of the pathogenesis and arterial inflow to hemorrhoids. (RAR: Recto Anal Repair) was added, in order to reduce remaining mucosal redundancy. The procedure is now known as HAL/RAR (Hemorrhoid Artery Ligation/Recto Anal Repair- A.M.I. GmbH, Austria) In Argentina, local FDA has approved its use since June 2012 and is commercially available since October 2012.

### Results

This new hemorrhoid treatment procedure is minimally invasive. It is carried out on an area that is relatively less sensitive to pain. It does not involve tissue removal. HAL (Hemorrhoid Artery Ligation) uses dopple technology to find the blood flow within the small artery feeding the dilated hemorrhoid to be treated. Once the artery is identified, a reabsorbable suture in a figure of eight (Polyglycolic acid) is placed around it. The suturing restricts the blood flow, which in time, will result in the shrinkage of the hemorrhoid and relief of symptoms as: bleeding. For larger Grade IV hemorrhoids, internal component is sutured and lifted back into the anal canal by means of a running absorbable suture (RAR= Recto Anal Repair) (see Table). Hemorrhoidal arterial ligation lift treatment may also reduce the external hemorrhoids, solving the second most important symptom, which is prolapse. The sutures will dissolve over a short period of time (6-8 weeks).No tissue resection takes place and all sutures are placed above the dentate line, in order to prevent postoperative discomfort. Patients may resume their normal activities within few days, and as with other hemorrhoid treatment surgeries, avoiding physical efforts is recommended for around four weeks.

### Conclusions

Surgeons who would like to introduce this practice to their surgical activity should be trained and supervised by an expe-

Study	Year	n	Hemorrhoid grade %	Ligations n (range)	Mucopexy n	Duration of operation min	Early complications n	Hospital stay days	Recurrence %	Follow-up mo
Scheyer M et al	2008	72	III, 74 IV, 26	8 (3-12)	1 to 5	NS	Bleeding 4 Thrombosis 2 Fissure 1 Urinary retention 2	NS	4 (G III) 1 (G IV)	NS
Theodoropoulos et al	2008	46	III, 33 IV, 67	10 (6-16)	1 to 4	NS	Bleeding, 1 Tenesmus, 1 Prolapse, 1	1	8.6	15
Infantino et al	2009	112	II, 35 III, 65	7 (4-11)	3 to 5	34	Bleeding, 1 Thrombosis, 3 Urinary retention, 1	1	13	15
Walega et al	2009	29	III, IV, 100	5 (4-9)	1 to 4	35	Bleeding, 1	2	NS	3
Satzinger et al	2009	83	III, 90 IV, 10	6 (3-11)	1 to 6	27	Pain, 1 Thrombosis, 2 Urinary retention, 3 Abscess, 1	3	6	12
Ratto et al	2010	56	II, 9 III, 82 IV, 9	6	NS	30	Bleeding, 2 Thrombosis, 4	1	4	11.5
Faucheron et al	2010	100	IV, 100	9 (4-14)	1 to 4	32	Bleeding, 4 Thrombosis, 3 Pain, 6 Dyschezia, 1	1	9	34
SungWook Cho et al	2010	34	II, 38 III, 47 IV, 15	NS	NS	35	Urinary retention 1 Bleeding 1	1,4	5	34,5
Wan Jo Jeong et al.	2011	97	II, 13 III, 68 IV, 16	6	6	34	Tenesmus 19 Bleeding 8 Urinary retention 7	1,6	14,4	
Roka et al	2012	184	III, 58 IV, 42	6 (2-11)	3 (1-9)	35	Pain 10 Itching 9 Bleeding 13 Anal Stenosis 1 Urinary Retention 1	2,3	8 (G III) 13 (G IV)	12
Piccinini et al.	2013	20	III 10 IV 10	5 (4-8)	2 (1-4)		Pain 6 Thrombosis 2	0.4	2	5

rienced coloproctologist. HAL-RAR appears to be as safe as conventional surgery and has potentially fewer risks.

**Key words:** hemorrhoidal disease, HAL RAR, treatment,

15.

## Outcomes of early rectal cancer at Tata Memorial Centre

Shailesh V. Shrikhande, Gaurav Chaubal, Ashwin Desouza, Mahesh Goel

*GI and HPB Service, Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India*

### Background/Aim

The incidence of colorectal cancer in India is low but increasing in urban population. Prognosis of patients with early rectal cancer is significantly better than those who present at an

advanced stage. The purpose of this study was to analyse our results of early rectal cancer.

### Methods/Patients

Patients were divided into 3 groups. Group 1 comprised of early rectal cancers (T1, T2, N0), Group 2 comprised of patients who were downstaged to stages T1 or T2 stage after neoadjuvant chemoradiation and group 3 comprised of advanced rectal cancers (T3, T4, N1). A retrospective analysis of a prospectively maintained database was done. Recurrence was studied in the 3 groups.

### Results

From May 2010 to February 2013, a total of 335 cases underwent resection for carcinoma rectum. Group 1 comprised of 16 (4.8%) cases, group 2 comprised of 146 (43.5%) cases and group 3 comprised of 173 (51.6%) cases. In Group 1, 7 (43.8%) underwent anterior resection, 3 (18.8%) underwent low anterior resection, 2 (12.5%) underwent ultralow anterior resection and 4 (25%) underwent APR. In Group 2, 22 (14.9%) underwent anterior resection, 21 (14.2%) underwent low anterior resection, 24 (16.2%) underwent

ultralow anterior resection, 72(48.6%) underwent APR, 2 (1.4%) underwent Hartmann's and 5(3.4%) underwent total proctocolectomy. In Group 3, 46(26.6%) underwent anterior resection, 26 (15%) underwent low anterior resection, 16 (9.2%) underwent ultralow anterior resection, 66 (38.2%) underwent APR, 13(7.5%) underwent Hartmann's and 5(2.9%) underwent total proctocolectomy. Mean follow up was 18 months. In group 1, no patient developed recurrence, in group 2, 7(4.8%) developed systemic recurrence but no local recurrence and in group 3, 25 (7 local; 18 systemic) (14.4%) developed recurrence. Patients in group 1 had the best prognosis followed by those of group 2 and group 3.

### Conclusion

Our results highlight the need for increased awareness to diagnose early rectal cancers and the crucial role of neo-adjuvant chemoradiation in improving outcomes in resectable but advanced rectal cancers.

**Key words:** early rectal cancer,diagnose, outcomes Tata memorial centre

---

## 16.

---

### Ultralow anterior resection in era of neoadjuvant therapy

Shailesh V. Shrikhande, Gaurav Chaubal, Ashwin Desouza, Mahesh Goel

*GI and HPB Service, Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India*

#### Background/Aim

For patients with low rectal cancer, abdomino-perineal resection (APR) and low anterior resection (LAR) was considered as the procedure of choice. However ultra low anterior resection (ULAR) with sphincter preservation is also now considered as a safe procedure with equivalent oncological outcomes. The purpose of this study was to compare our results for the 3 procedures done for low rectal cancers.

#### Methods

A retrospective analysis from prospectively maintained databases was done. Low rectal cancers were defined as those lying within 7 cm from the anal verge. An analysis of their surgical outcomes was done.

#### Results

From May 2010 to February 2013, a total of 226 cases underwent resection for low rectal cancers. 140(61.9%) patients underwent APR, 47(20.8%) underwent LAR and 39(17.2%) underwent ULAR. In the ULAR group, the mean age was  $47 \pm 15.3$  years (14 – 73 years). Mean hospital stay was  $8.7 \pm 4.7$  days (7 – 25 days). Mean distance from anal verge was  $4.9 \pm 1.2$  cm (3 – 8 cm). Mean blood loss was  $490 \pm 320$  ml (100 – 1500 ml). Out of the 39 cases, 1 was done laparoscopically and 1 was laparoscopic assisted. Double Stapled anastomosis was done in all cases. A covering stoma was done in 32 cases (82.1%). The complication grade was Grade 0 (79%), Grade 1 (2.6%), Grade 2 (10.3%), Grade 3b (7.7%) (Clavein Dindo classification). In grade 3b, two patients had an anastomotic leak and one patient developed recto-vaginal fistula. 33 cases (84.6%) received neoadjuvant chemoradiation. Out of the 39 cases, 2 (5%) had T1 tumours, 10 (25%) had T2, 16 (41%) had T3 and no residual tumour was found in 11 (25%) cases. The average lymph node yield was  $9.1 \pm 5.9$  (0 – 22). Average number of positive nodes was  $1.5 \pm 2.8$  (0 – 13). Mean follow up was 18 months. None of the patients had local recurrence. However, 2 patients developed liver metastasis during follow up period. There was no perioperative mortality in any group. The morbidity rate was 14.2% in APR group, 12.8% in LAR group and 20.5% in ULAR group. 17 (12.1%) patients had recurrence in APR group, 5(10.6%) in LAR group and 2 (5.1%) in ULAR group.

#### Conclusion

ULAR should only be done in selected patients with lower T stage and those who are termed good responders after neoadjuvant chemoradiation in a multidisciplinary setting. They can be done safely without compromising on oncologic outcomes.

**Key words:** low rectal cancer, neoadjuvant chemoradiation, LAR, ULAR

17.

## Surgical management of radiation-induced rectovaginal fistulas

Seung-Kook Sohn

*Department of surgery, Yonsei University College of Medicine, Seoul, Korea*

### Background/Aim

Rectovaginal fistulas (RVFs) represent an often devastating condition in patients and a challenge for surgeons. Successful management of this condition must take into account a variety of variables including the etiology, size, and location of the fistula.

Especially, radiation-induced RVFs are one of the most complicated types. Iatrogenic RVFs occur after pelvic surgery and radiotherapy for the treatment of rectal or gynecologic malignancy in 0.5-5 % of patients. In spite of various surgical techniques, there is still no clear guideline regarding the management of these fistulas.

### Methods/Patients

It was reported that spontaneous closure of RVFs was observed in only 3 of 17 patients. There are two basic principles in the treatment of RVFs. First, due to the high pressure of rectal side, the rectal side repair must be imperious. Second, it is very important to interpose a viable tissue between the rectum and the vagina. From this concept, the gracilis muscle flap was introduced. The gracilis muscle provides a well vascularized rotational flap without any effect on the strength or range of motion of the lower limb. According to a recent report, 100% success rate of their two patients with preoperative chemoradiation followed by surgery was achieved using gracilis muscle transposition.

### Results

In our institute, we reported clinical analysis of 62 rectovaginal fistula patients from various causes. In this analysis, the type of RVFs was classified to simple and complex type according to their location, size and etiology. Most complex RVFs including 17 patients with radiation-induced RVFs were repaired through abdominal approach or tissue transposition. With an average follow up of 20 months, 58.1% of all RVFs were completely healed.

We also reported clinical results of coloanal anastomosis in radiation-induced RVFs in 8 patients. All 8 patients concur-

rently received irradiation and induction chemotherapy due to primary gynecologic malignancy. For 7 out of 8 patients underwent low anterior resection with handsewn coloanal anastomosis without diverting stomas. During the median follow-up period of 25 months, two patients developed anal stenosis and in terms of sphincter function, there were 1 patient with urgency, 1 with gas incontinence and 1 with night staining. Moreover, according to the data from 1997 to 2012 in our institute, 7 out of 9 patients with radiation-induced RVFs were completely repaired by low anterior resection with handsewn coloanal anastomosis.

### Conclusion

Rectovaginal fistulas, especially caused by pelvic radiation, present a distressing problem for the patient and a challenge for the treating physician. From our experiences, if anastomosis is performed between normal and healthy tissues after complete removal of irradiation-damaged tissues, then one-staged handsewn coloanal anastomosis after low anterior resection without diverting stomas may guarantee favorable surgical and functional outcomes.

**Key words:** rectovaginal fistulas, surgical management, radiation.

18.

## Updates in irritable bowel syndrome

Sunil Kumar Gupta

*Main hospital, Bhel, Ranipur, Hardwar, Uttarakhand, India*

### Background/Aim

Irritable bowel syndrome (IBS) is a common Functional Gastro Intestinal Disorder (FGID) characterized by bouts of recurrent abdominal pain, bloating or discomfort associated with disturbances in defaecation which are not explained by structural abnormalities. IBS occurs worldwide with similar incidence in US & Europe. Incidence of IBS is increasing in developing countries. Since the etiology is not clearly understood. Recent research in understanding pathophysiology of the disease has resulted in exciting new insights which suggest IBS may be product of pathogenic mechanisms. IBS is often classified into four subtypes viz. constipation predominant (IBS-C), diarrhoea predominant (IBS-D), mixed IBS (IBS-M) and gas/bloating predominant unsubtyped (IBS-U). Diagnosis of IBS is by and large clinical in the ab-

sence of any biological markers. Clinicians use a holistic approach to diagnose IBS taking note of features beyond gut such as behavior, previous medical history, pelvic symptoms, backache, headache etc. 50% IBS patients are depressed or anxious having sleep disturbances.

### Methods/Patients

Somatization is a feature of many IBS patients which can easily be recognized by personal health questionnaire 15.

Management recommendations for IBS are directed towards determination of psychological concerns like anxiety/ depression, cognitive behavioral therapy and psychodynamic interpersonal therapy and hypnotherapy. Exclusion diets have modest efficacy in improving symptoms in IBS patients. Luboprostine and tegaserod have offered a therapeutic gain of 7 – 15 % over placebo in constipation predominant IBS. Bifidobacter infantis, nonabsorbable antibiotic (rifaximin), loperamide and alosetron help relieving symptoms in diarrhoea predominant IBS. The selected antispasmodics and tricyclic antidepressants (TCA) and selective serotonin reuptake inhibitors (SSRI) are effective in improving global IBS symptoms and abdominal pain. Recently mesalamine, pregabalin, gabapentene, clonidine and octreotide have been used to treat IBS.

Two formed meta-analysis have investigated the performance of Rome III and Manning Criteria: psychological concerns and a new therapeutic approaches. Complementary and alternative medicine therapies; such as probiotics, herbal therapies and acupuncture are gaining popularity amongst IBS sufferers. Although manufacturing standards and safety concerns remain unanswered.

### Conclusions

Despite all limitations, this remains quite exciting that IBS represents an area of intense investigations from multiple directions. Therapy that alters the natural history of IBS is yet to be identified and current knowledge of IBS is constantly in evolution. As new insights into pathophysiology of IBS emerge, better therapies will be in vogue.

**Key words:** IBS symptoms, new therapy

## Early loop ileostomy closure: should we do it routinely?

Viktorija Vilyte, Narimantas Evaldas Samalavicius

*Center of Oncosurgery, Oncology Institute of Vilnius University, Santariskiu 1, Vilnius, Lithuania.*

### Background/Aim:

Loop ileostomies are frequently used in colorectal surgery after ileoanal or coloanal anastomosis to prevent complications associated with the anastomosis. These stomas are not without complications. Temporary loop ileostomies constructed to protect distal anastomoses are generally closed at 8 to 12 weeks, a period long enough to encounter stoma-related complications, which reduces the quality of life. Early closure may be considered to overcome these adverse effects. The aim of this study was to review patients after early loop ileostomy closure.

### Methods

Complications and postoperative morbidity after early loop ileostomy closure were assessed retrospectively by reviewing the medical records.

### Results

Of the 10 patients assessed, 5 were male and 5 were female with the average age 71 years (from 65 to 85). Ileostoma was performed: 7 patients with colorectal cancer after rectal resection, one patient with ovarian cancer after colorectal resection, one patient after anastomotic strictures resection and one patient after bowel reconstruction surgery. Anastomotic integrity was examined before closure in all patients. The average time from operation to loop ileostomy closure was 11 days. Overall, complication rate was 30 percent. One patient (10%) had a gas continence, which passed through conservative treatment. One patient (10%) developed enteric fistula to the ileostomy incision and was one wound infection (10%).

### Conclusions

Due to the small number of patients observed high overall complication rate cannot be considered as scientifically significant. Nevertheless all complications were managed conservatively without reoperation. According to the literature, loop ileostomies should be closed as early as medically possible for those patients who undergo adjuvant chemotherapy. This study suggests that early stoma closure is feasible for selected patients without anastomotic complications.

**Key words:** early ileostomy closure, complications, surgery

20.

## A pathway to colorectal surgery subspecialty and consultant post in the UK

Richard G. Ward, Raimundas Lunevicius,  
Simone Slawik

*Aintree University Hospitals NHS Foundation Trust,  
Longmoor Lane, Liverpool L9 7AL, UK  
Mersey Deanery School of Surgery, Brunswick Business Park,  
Liverpool, L3 4BL, UK*

### Background/Aim

The presentation will review a process of training in the specialty of general and colorectal surgery in the UK. Graduates of University Medical Schools of the UK or other EU country have to complete a two year Foundation Programme covering a range of subspecialties, not just surgery. They rotate through themed programmes of four month posts, two in a chosen subspeciality and two in related surgical disciplines. Achievement of set Curriculum objectives is expected for satisfactory completion of the Core Surgical Training programme, including The Membership of the Royal Colleges of Surgeons examination.

The next step is to obtain general surgery trainee status via competitive entry through national selection and complete The Intercollegiate Surgical Curriculum Programme (ISCP) which has been developed on an intercollegiate basis, involving 13 Royal Colleges, Associations, and their Specialist Advisory Committees. Both Core Surgical Training programme and ISCP are based on outcome educational model. It means that within such model, training is not a matter of hours and years worked in the NHS Trust within each Deanery but requires demonstration of achievement of competencies set out in the ISCP for each stage of training.

Minimum duration of training in general surgery is six years (ST3 – ST8). The aim of the ISCP, 2013, is to train surgeon to be able to function at an effective level in Emergency General Surgery and at an effective level as a consultant in a team with a special interest (UGI, HPB, colorectal, etc.). After completion of clinical competencies, all candidates must pass final Intercollegiate Speciality Examination to be eligible for a Certificate of Completion of Training (CCT). They are then eligible for entry to the General Medical Council (GMC) Specialist Register which enables surgeons to compete for Consultant Posts. Unlike most other countries, there is no hierarchy after employment as a Consultant Surgeon. Appointees to new Con-

sultant posts are therefore expected to perform at a high level from day one. As a result the Specialist Advisory Committees which oversee training have specified recommended numbers of procedures to be achieved in an attempt to standardise training. We will look at the numbers and implications for trainers.

### Conclusions

Diagnostic and curative flexible sigmoidoscopies and colonoscopies are mandatory components of colorectal surgeon training. In UK, such training is carried out in conjunction with our gastroenterology colleagues with strict conditions for completion of endoscopy training to enable independent practise. Training in laparoscopic colorectal surgery is mandatory. This was initially delivered in post CCT fellowship posts designated for laparoscopic training but as expertise has developed, this training is increasingly delivered during the six year training programme. A minimum of 20 laparoscopic colorectal resections would be expected of a CCT trainee. UK training in subspeciality colorectal surgery is now highly developed. However, excessive focus on colorectal disease to the detriment of general surgical skills could compromise standards of Emergency General Surgery.

**Key words:** colorectal surgery, subspeciality, consulting post in the UK

21.

## Transanal endoscopic microsurgery (TEM) for early rectal cancer: single center experience

Marijus Ambrazevicius,  
Narimantas Evaldas Samalavicius

*Center of Oncosurgery, Oncology Institute of Vilnius University,  
Santariskiu 1, Vilnius, Lithuania*

### Background/Aim:

To evaluate the initial experience with transanal endoscopic microsurgery (TEM) for early rectal cancer in a single center.

### Patients and methods

From February 2010 to October 2012 a total of 16 patients underwent TEM for early rectal cancer. 7 were women and 9 men, age range 52 to 88 years (median – 71 years). Postoperative surveillance protocol, which includes rigid proctoscopy,

CEA and endorectal ultrasound every 3 months during first two years, was applied to all patients after TEM.

### Results

Final histology revealed 10 (62.5%) lesions to be cancers: T1 and 6 (37.5%) T2. There were no postoperative complications. All 6 patients in pT2 group and those in pT1 group with unfavorable histology were offered adjuvant chemoradiotherapy or immediate radical surgery. Patients were followed up from 1 to 27 months (median – 14 months). There was one local recurrence (6.25%) in a patient who refused to undergo abdominoperineal excision for T1 low rectal cancer, had unfavorable histology after TEM, for which reason underwent postoperative chemoradiation. The patient had abdominoperineal resection 7 months after TEM (rpT2N0M0). One patient was lost to follow-up. The rest of the patients are alive and disease-free.

### Conclusions

In our hands, TEM was an alternative to standard total mesorectal excision in patients with low risk early rectal cancer. Further follow-up is necessary to evaluate recurrence and survival rates after TEM for patients with invasive rectal cancer.

**Key words:** early rectal cancer, TEM

---

22.

---

## Laparoscopically-assisted resection rectopexy for rectal prolapse: ten years' experience

LH. Ashari, JW. Lumley, AR. Stevenson, RW Stitz  
*Colorectal Unit, Royal Brisbane Hospital, Brisbane, Australia*

### Background/Aim

This study has been undertaken to audit a single-center experience with laparoscopically-assisted resection rectopexy for full-thickness rectal prolapse. The clinical outcomes and long-term results were evaluated.

### Methods

The data were prospectively collected for the duration of the operation, time to passage of flatus postoperatively, hospital stay, morbidity, and mortality. For follow-up, patients received a questionnaire or were contacted. The data were divided into quartiles over the study period, and the differences in operating time and length of hospital stay were tested using the Kruskal-Wallis test.

### Results

Between March 1992 and October 2003, a total of 117 patients underwent laparoscopic resection rectopexy for rectal prolapse. The median operating time during the first quartile (representing the early experience) was 180 minutes compared with 110 minutes for the fourth quartile (Kruskal-Wallis test for operating time = 35.523, 3 df,  $P < 0.0001$ ). Overall morbidity was 9 percent (ten patients), with one death (<1 percent). One patient had a ureteric injury requiring conversion. One minor anastomotic leak occurred, necessitating laparoscopic evacuation of a pelvic abscess. Altogether, 77 patients were available for follow-up. The median follow-up was 62 months. Eighty percent of the patients reported alleviation of their symptoms after the operation. Sixty-nine percent of the constipated patients experienced an improvement in bowel frequency. No patient had new or worsening symptoms of constipation after surgery. Two (2.5 percent) patients had full-thickness rectal prolapse recurrence. Mucosal prolapse recurred in 14 (18 percent) patients. Anastomotic dilation was performed for stricture in five (4 percent) patients.

### Conclusions

Laparoscopically-assisted resection rectopexy for rectal prolapse provides a favorable functional outcome and low recurrence rate. Shorter operating time is achieved with experience. The minimally invasive technique benefits should be considered when offering rectal prolapse patients a transabdominal approach for repair, and emphasis should now be on advanced training in the laparoscopic approach. **Key words:** rectosopexy rectal prolaps laparoscopy- assisted resection.

**Key words:** rectal prolapse, laparoscopy, resection pectopexy

---

23.

---

## Future of surgery: evolution of minds and materials

Ho-Kyung Chun

*Department of Surgery, Kangbuk Samsung Hospital  
Sungkyunkwan University School of Medicine*

### Background/Aim

With the development of science and technology, there have been considerable changes in surgery recently. Since minimally invasive surgery was first introduced two decades ago,

it has been evolved continuously. New surgical procedures such as single incision laparoscopic surgery and NOTES (Natural Orifice Trans-luminal Endoscopic Surgery) have been developed and lively studied. Robotics is one of the hottest issues. It still has pros and cons, nevertheless we can't imagine future of surgery without it.

On the other hands, evidence based medicine changed the paradigm of perioperative care. Critical pathway and ERAS (Enhanced Recovery after Surgery) program suggested new strategy for surgery patients. Development of the life-support devices for the critically ill patients gave us the chance to perform more aggressive procedure.

The current state in these related fields with slight expectation of near future will be reviewed.

### Conclusions

We are expecting profound changes existing as an extension of the present, because the future is always based on the past. With this recent progress of minds and materials, the future surgery will be a both minimally invasive and aggressive one.

**Key words:** future surgery, minds and materials

---

24.

---

## Colorectal disease treatment in China: Past, present and future

Y. J. Ding

*Colorectal section, Nanjing TCM hospital, Nanjing, Jiangsu, China*

### Background/Aim

Hemorrhoids: From BC770, China has named the name "zhi" and classified 5 subsets according to five main symptoms. Nearly same era, arsenic and alum as basic elements have been used as sclerosing agent from powder nail to injection solution. Ligation therapy, from AD 982, spider silk in internal hemorrhoids ligation reported. Now this therapy has stead by silk thread, instrument rubber band, Doppler-Guided or by revised M-M Ferguson procedure, stapler ano- pexy etc. Future, more research in epidemiology Pathogeny pathology and post operation pain are needed.

### Methods/ Results

1. Anal fissure: Chinese herb medication, hip bath and cream effectively release spasm and pain. External application 0.2 nitroglycerin cream and injectable Botulinum toxin used in routine practice.
2. Perianal abscess: Take Chinese Medicine theory (dispelling supporting and reinforcing therapy) in different stages. Identify the abscess location and infection stages by 3D ultrasound before operation.
3. Anal fistula. From AD 1556, there was detailed record about seton therapy. Now although combined with partly incision, partly stitch and tube drainage, complex fistula is still challenging in recurrence, cure time and function issues. Fistula plug and LIFT procedure haven't widely used in China.
4. Rectal prolapse: Injection "Xiaozhiling" in submucosa and perianal fossa used in several special centers. Most popular procedure is suture rectopexy or Delorme procedure with levator muscle plasty. More concerned in multidisciplinary evaluation before operation in constipation, fecal incontinence etc.
5. Colon rectal cancer. Chinese herb has been used to reduce the side effect of chemoradiotherapy and enhance the immune system as complementary way. Now fecal occult blood test is the first step in tumor screening.
6. Constipation and fecal incontinence: Pelvic floor center and multidisciplinary clinical pathway continuously improved the results. Now research in acupuncture shows potential benefits.
7. IBD: Herb perfusion by an enema instrument showed symptoms release long term in mild and moderate patients. Mechanism research showed gut micro bacterial improvement and mediators of inflammation inhibition

### Conclusions

Pay more attention in practice parameters performance and development. Integrated western and oriental medicine in functional disorder request, non-operation and microsurgery is the trend.

**Key words:** Colorectal diseases, treatmentin, past, present, future

25.

## Robotic versus laparoscopic colorectal surgery

Francis Seow-Choen

*Fortis Colorectal Hospital Singapore*

### Background/Aim

Most cases of colonic or rectal cancers can be efficaciously managed by a totally laparoscopic approach. There are many approaches used by different laparoscopic surgeons. However with the current instrumentation available all the various techniques needed for any colonic or rectal lesion can be managed by laparoscopy. However robotic surgery is one more new tool to help patients who may otherwise need open surgery and a long painful scar with prolonged post operative recovery. Cases of rectal cancer which are very near to the ano-rectal junction or following neo-adjuvant chemo-irradiation therapy may require robotic surgery. In cases where the cancer is in the low rectum or the patient is very fat and the pelvis very narrow as in many male patients, then the use of robotic surgery will be very useful indeed. The robot is useful as it can imitate the surgical wrist and fine finger movements and allows for complicated 7 degrees of movement which traditional laparoscopic surgery cannot. The robot because of its flexibility makes dissection much easier and is recommended for this sort of low lesions in the rectum.

### Conclusions

One disadvantage of the robot is the field of vision is much narrower than the laparoscope and clinic experience is needed to make sure that the right planes and surgical dissection direction is adhered to. A further disadvantage may be the fact that the robotic arm is unable to move backwards and in difficult situations multiple dockings of the robot may be needed. The traditional laparoscopic approach is more flexible than in this regard.

**Key words:** colorectal surgery, laparoscopy, robotic versus,

26.

## Clinical features of tuberculous anal fistulas

Paul Goldberg

*Colorectal Unit, University of Cape Town and Groote Schuur Hospital, Cape Town, South Africa*

### Background/ Aim

Anal sepsis caused by tuberculosis (TB) is rare. We wished to establish the prevalence at a referral hospital in an endemic area.

### Patients and methods

Over a 2 year period from 2004 to 2006, all patients who underwent surgery for anal fistula had specimens collected for histopathology, Zielh-Neelsen staining and culture for tuberculosis.

### Results

96 patients had 117 operations performed for anal fistula disease. 7 patients had TB demonstrated on histopathology and ZN staining (in 5) or TB culture (1). None of these 7 patients had constitutional symptoms of TB and only 1 had radiological evidence of active pulmonary TB. The TB was diagnosed on the median second (range 1-4) biopsy taken. 5 of the 7 patients were HIV -ve and 2 declined testing. The fistulas had multiple external openings in 5 and a single external opening in 2. 2 fistulas healed after standard 4 drugs anti tuberculous therapy, but the rest persisted at a median follow-up 2 years (range 6 to 30 months).

**Conclusion:** 7.3% of anal fistulas are caused by TB at a referral hospital in an endemic area. The diagnosis is difficult to make clinically and repeated biopsies and culture are required. Anti-tuberculous treatment seldom heals the fistulas.

**Key words:** tuberculous, anal fistulas, diagnosis

27.

## Treatment strategy of early colorectal cancer: What should be done?

F.Konishi, K.Togashi

*Department of Surgery Nerima Hikarigaoka Hospital Tokyo Japan*

*Department of Colorectal Surgery/ endoscopy Aizu*

*General Hospital*

### Background/Aim

The management of T1 colorectal cancer has been a controversial issue in the treatment of colorectal cancer in early stages. The purpose of this report is to clarify the process of determining the selection of treatment for early stage colorectal cancer (Tis T1). Firstly the colonoscopic appearances under meticulous observation are important findings that will determine whether colonoscopic resection or bowel resection should be done as an initial treatment. Magnifying colonoscopy is also an important tool to estimate the grade of invasion in the submucosal.

### Methods/Patients

These endoscopic findings were analyzed in 162 cases. When pit pattern V is seen it was considered to be the sign of deep invasion in the submucosal. The indication for bowel resection will then be determined according to the histological findings of the resected specimens. Our histological analysis of T1 stage cancer, substantial invasion depth in the submucosal, lymphatic channel invasion, moderate to poor differentiation, invasive front on histology (budding) were significant risk factors for the estimating lymph node metastasis.

### Results

Endoscopic mucosal resection (EMR) is a useful and safe method to remove relatively large sessile lesions. In this method, saline or hyaluronic acid solution is infused in the submucosa to lift up the lesion. After the infusion and the lift up, a snare wire will be placed around the tumor and the lesion will be removed by the usage of electrocoagulation. Endoscopic submucosal dissection (ESD) is used to remove even larger sessile lesions. In this method, after the injection of hyaluronic acid, the mucosa surrounding the lesion will be circumferentially divided by the usage of "needle knife" or "hook knife". Subsequently the submucosa will be dissected by using similar devices from the distal side to the proximal side. Although this is a time consuming and tedious procedure, it can well be tol-

erated by the patients. The important advantage of ESD is the en block resection which will lead to a better treatment than piece meal resection. Although the time for this method is usually long, the procedure is less invasive than bowel resection.

### Conclusions

Colonoscopic findings are important for the determination of the depth of invasion in the submucosa prior to resection. When endoscopic resection is performed the presence of one or more of the above histological features is considered to be the indication for bowel resection. The treatment of T1 stage cancer should be discussed in a team of endoscopists, surgeons and histopathologists to choose an optimal method of treatment.

**Key words:** early colorectal cancer, treatment strategy

28.

## Current status of LigaSure hemorrhoidectomy

Daniel Markaryan, Petr Tsarkov

*Department of coloproctology and endoscopic surgery, Faculty of postgraduate professional education of physicians, Department of colorectal surgery, University Hospital #2, Clinical Center, First Moscow State Medical University n.a. I.M. Sechenov, 1/1 Pogodinskaya str. 119435 Moscow, Russia*

### Background/Aim

The use of radiofrequency energy instead of conventional diathermy in surgical treatment for hemorrhoids first described in 2001. Since then, many randomized, trials have been conducted to evaluate its efficacy, compared to conventional diathermy hemorrhoidectomy. The LigaSure vessel sealing system is a bipolar electrothermal device that seals blood vessels through an optimized combination of pressure and radiofrequency. Its use has the advantage of reduced lateral thermal damage of surrounding tissues.

### Results

This topic summarizes data from most influential trials and meta-analysis to define the role of LigaSure hemorrhoidectomy in modern anorectal surgery. The overwhelming majority of publications concluded that LigaSure hemorrhoidectomy has same effectiveness and safety as conventional diathermy, but also has several advantages like *ease of use, reduced bleed-*

*ing and operative time, less wound healing time, postoperative pain and complication rate and earlier return to work.*

### Conclusion

Because of all this advantages Ligasure™ hemorrhoidectomy can be recommended as a standard for day-care procedure.

**Key words:** ligasure, hemorrhoidectomy

29.

## Complex recurrent fistula in ano: back to the seton and ways to avoid incontinence

Nasser Al-Sanea

*Section of Colon & Rectal Surgery, King Faisal Specialist Hospital & Research Center-Riyadh, Saudi Arabia*

### Background/Aim

A 30-percent gas incontinence rate has been reported after the use of the cutting seton in complex anal fistulas. This study was undertaken to determine the morbidity and efficacy of the cutting seton in the management of complex anal fistulas at the King Faisal Specialist Hospital.

### Methods

All patients who had a cutting seton inserted for complex fistula in ano at the colorectal unit at King Faisal Specialist Hospital between 1999 to 2009 were identified from a colorectal data base. The charts of these patients were examined and form the basis of this report. Setons were inserted and tied under general anesthesia after the fistula tract had been identified. All fistulas were transsphincteric, and if it seemed that more than 30 percent of the internal sphincter would need to be divided to “lay open” the tract, a seton was used. Fistulas were designated “high” if the internal opening was above the level of the anal crypts. Setons were tightened under general anesthesia at intervals of six weeks until cutting was complete. Patients were followed up until wounds had healed and fistula symptoms had resolved. Patients were questioned about incontinence according to the Waxner’s scale.

### Results

Data from 47 patients were analyzed. The mean duration of disease before surgery was 39.1 months. Twenty-five pa-

tients had had previous anorectal abscess drainage. The mean number of previous fistula operations was 2.2. Before seton insertion five patients were incontinent to gas, two to liquid stool, and none to solid stool. Continence status before seton surgery was unknown in 11 patients. There were 16 “high” fistulas. Diluted Methylene blue dye or Pure saline was used to identify the internal opening in 14 patients when simple probing failed. Setons were tightened on three or more occasions in 12 patients, twice in 19 patients, and once in 16 patients. Mean perineal wound healing time was six months. The mean length of follow-up was 1.1 years, and during this time one fistula recurred. After treatment a total of 17 patients (36.2 percent) were incontinent to gas, 4 to liquid feces (8.5 percent), and 1 to solid feces (2.3 percent). Four patients complained of soiling. Of previously continent patients, 7 percent were incontinent to gas.

### Conclusions

The use of the cutting seton resulted in gas incontinence rate of 7 percent after a mean follow-up of 1.1 years in previously continent patients. Only 1 fistula recurred.

**Key words:** fistula in ano, incontinence

30.

## Excisional hemorrhoidectomy – is it still the gold standard?

Tomas Poskus

*Vilnius University Hospital „Santariskiu Klinikos“ Lithuania*

### Background/Aim

Ideal treatment for hemorrhoids would be the one that effectively provides cure with minimal discomfort, is safe, has low chance of recurrence in the long term, can be done as an outpatient and with minimal interruption of daily activities and early return to work and at a minimal cost, it should be simple to learn and use. There is significant body of evidence in the literature on various treatment methods for hemorrhoids. Conservative treatment options - flavonoids and fiber do reduce symptoms of hemorrhoids, however they do not reduce hemorrhoidal prolapse. Invasive non-operative procedures, of which rubber band ligation is most commonly used, are significantly better compared to hemorrhoidectomy in terms of post-procedure pain, however

they are also significantly less effective, and also not suitable when hemorrhoidal symptoms are attributed to the external component of hemorrhoids. Recent metaanalysis compared open and closed hemorrhoidectomy procedures: open hemorrhoidectomy seems to be faster and simpler to perform, whereas closed technique results in faster wound healing. Overall, there is no difference between effectiveness of open and closed techniques in the long term and it is almost perfect. Ligasure hemorrhoidectomy seems to improve operative performance – it reduces blood loss, decreases operative time but does not seem to improve distant outcomes.

#### Method/Patients

New techniques of hemorrhoid surgery have been studied, although not all of them equally well. Stapled hemorrhoidopexy has been evaluated in multiple well designed randomized controlled trials and reviewed by several metaanalyses.

**Results:** It has definite early benefits: shorter operative time, less postoperative pain and less urinary retention, faster return to regular activities. However, long term results – recurrence of the prolapse and residual skin tags - are all better in standard hemorrhoidectomy group. Transanal hemorrhoidal dearterialization produces similar results to stapled hemorrhoidopexy but with less postoperative pain.

#### Conclusions

Multiple randomized controlled trials and meta-analyses confirm that excisional hemorrhoidectomy is the most effective method of treatment however it is associated with significant postoperative discomfort. So it unfortunately does not satisfy all the requirements for an ideal procedure to treat hemorrhoids.

**Key words:** excisional hemorrhoidectomy, standarts

---

31.

---

## Outpatient clinic hemorrhoids surgery

Pravin J. Gupta

*Nagpur, India*

#### Background/Aim

A persistent search for an ideal treatment for hemorrhoids is on since time immortal. The aim is to minimize postoperative discomfort, avoid complications, and provide early re-

covery and return to work. With better understanding of the importance of hemorrhoidal cushions, the search is on for preservation of the same while minimizing recurrence and relapse. In the last decade, many new inclusions have been made to address symptomatic hemorrhoids, which mainly include the staplers, harmonic scalpel, ligaSure, dopler guided dearterialization, radiofrequency surgery etc. The main aim of introduction of these procedures is to improve patient satisfaction while minimizing intra and post operative complications.

#### Objective

This review gives an update on various treatment options for symptomatic hemorrhoids which can be performed in the office or on outpatient basis. From a therapeutic standpoint, the practitioner has access to a wide range of treatment methods. The multiplicity of treatment modalities is proof in itself that none is greatly superior to other. Each practitioner therefore must be in a position to offer the greatest possible range of treatment options in order not to be slave to one particular method, with the risk of using it in situations where it may not really be indicated.

#### Conclusion

It is always better to tailor the procedure according to the patient rather than opting for a copybook approach.

**Key words:** hemorrhoids; office procedure, outpatient surgery

---

32.

---

## High Macro Rubber-Band Ligature

José A Reis Neto, José A Reis Junior,  
Odorino H Kagohara, Joaquim Simões Neto,  
Sergio O Banci, Luciane H Oliveira

*Catholic University of Campinas, Clinica Reis Neto*

#### Background/Aim

The goal of a rubber band ligature is to promote fibrosis of the submucosa with subsequent fixation of the anal epithelium to the underlying sphincter. Following this principle a new technique of ligature was developed based in two aspects:

1. macro banding: to have a better fibrosis and fixation by banding a bigger volume of mucosa and

- higher ligature: to have this fixation at the origin of the hemorrhoidal cushion displacement.

### Methods

1634 patients with internal hemorrhoidal disease grade II or III were treated by the technique called High Macro-rubber band. There was no distinction as to age, gender and race. We have used special procedure. All expressed data are derived from our personal experience. The analysis was retrospective, without any comparison with conventional banding or infra-red coagulation. The period of evaluation extended from one to twelve years. After the last one year return, if the patient was asymptomatic and with a normal anoscopy, surveillance was performed by telephone, once a year. All the information was noted on the patient inventory. Only patients with a minimum of two years follow-up were included in the study.

### Results

The treated patients totalled 1634: 1275 (78%) have three areas treated in one single session, 279 (17%) have two areas and 80 (4.9%) have just one zone treated in one single session. Immediately after the procedure some patients may presents aching discomfort or tenesmus; to prevent these symptoms it is recommended to utilize an enema of 10 ml of 2% lidocaine (without adrenaline). After the 4<sup>th</sup> day of the procedure these manifestations of tenesmus declined until it disappears.

In this series no skin tag was resected with the banding, but the presence of anal skin tags does not contraindicates the macro rubber banding; if necessary they can be removed with local assisted anesthesia at the same time that the macro is performed or this skin tag resection can be performed in another session to avoid post-banding pain. The analysis of the immediate results showed peri-anal edema in 27 patients (1.6%), intense post-banding pain (need for parenteral analgesia) in 27 (1.6%), immediate tenesmus in 14 patients (0.8%) and urinary retention in two male patients (0.1%). Patients with anal edema had a painful post-banding period. Light bleeding on defecation was observed in 14 patients (0.8%) in the first post-banding week. More persistent bleeding was observed in three patients (0.18%) during the second week after the procedure.

On later surveillance, hundred and ninety five patients (11.9%) complained of anal symptoms, including itching, aching discomfort after defecation and bleeding or prolapse, but only sixty nine (4.2%) showed recurrence of the disease on a new medical evaluation. Symptomatic recurrence rate of 4,2% (69

patients). The majority of these patients (51-73.9) belonging to the group that have had one zone banded. Recurrence in the group with three zones banded was of 21.7% (15 patients of the 69). All patients with symptomatic recurrence (69) were treated by a new session of macro rubber-banding. None of the patients developed anal or rectal sepsis. None of the patients needed hospitalization for the observed complications.

### Conclusions

The High Macro rubber-banding technique represents an alternative method for the treatment of hemorrhoidal disease grades II or III, with good results at a low cost. The analysis of the observed results showed a small incidence of minor complications, with a high index of symptomatic relief.

**Key words:** hemorrhoidal disease, high macro rubber, band ligature

---

### 33.

---

## Lift procedure for anal fistula

Guillermo Rosato, Carina Chwat

*Colorectal Surgery-Surgical Department-Hospital Universitario Austral-Buenos Aires-Argentina*

### Background/Aim

Anal fistula is a common cause of chronic irritation to both patients and surgeons.

“Probably more surgical reputations have been damaged by unsuccessful treatment of fistula than by excision of the rectum or gastroenterotomy” (Sir Hugh Lockhart Mummery -1929)

Anal fistulas usually associated with a previous anorectal abscesses, due to infection of an anal gland within the intersphincteric space (level III evidence). In a small proportion of cases, however, sepsis occurs as a complication of specific diseases such as Crohn's, HIV, tuberculosis or hidradenitis suppurativa. There are other less frequent conditions such as lymphogranuloma venereum, sacrococcygeal teratoma or perianal actinomycosis that might cause anal fistulas.

Secondary tracts can be found in seldom cases and may be multiple, interpreted as complex. Complex fistulas are defined under the following circumstances: primary tract crossing 30–50% of the external sphincter i.e.: high trans-sphincteric, suprasphincteric and extrasphincteric, anterior track in a female, multiple tracks, recurrent fistula, Crohn's disease.

The different techniques described to treat fistula in ano implies that there are no single one yet perfect. Surgical practice varies across centers around the world.

Surgical treatment accomplishes a delicate balance between eradicating the fistula without compromising continence.

Quality of life is affected due to post op. pain, healing time, hospital stay, and this must be taken in account when treating patients with anal fistula.

Treatment alternatives evolved through time, and lately, new options are being considered in order to achieve successful results avoiding compromise of sphincter and adding better quality of life.

Surgical alternatives:

- Fistulotomy / Fistulectomy
- Seton: tight or loose?
- Medicated setons
- Anorectal myo-mucosal advancement flap
- Biological matrix (Surgisis™)
- Biological sealant (Fibrin Glue)
- LIFT / BIOLIFT
- VAAFT
- EXPANDED ADIPOSE-DERIVED STEM CELLS (ASCs)
- Other methods: radiofrequency ablation

### LIFT/ BioLIFT

The LIFT(Ligation of the Intersphincteric FistulaTract ) is a sphincter-preserving technique, adding a safe options to our alternatives in managing transphincteric fistula. The technique disconnects the internal opening from the fistulous tract and removes the infected residual anal gland, without dividing any part of the anal sphincter complex.

### Methods/Patients

In our experience we treated n= 27patients (22 males and 5 females) with the LIFT technique. Mean age 44.6 (30-77) years, with a mean follow up of 14 (33-2) months. Operative time was 62.7 (20-150) minutes. One recurrence was reported at one-month post op, and 3 at six months. Along the follow up period there were 4 recurrences in all (14.8%). Recurrences were treated as follows: one BioLIFT after a seton placement during 11 months (Figure 5), one had a BioLIFT, and two had a repeated LIFT procedure.

### Results

Personal experience is summarized on table 1 (Hospital Universitario Austral – Buenos Aires – Argentina) (Table 1)

A variation of the LIFT technique in which a bioprosthesis mesh (Surgisis Biodesign, Cook Surgical Inc, Bloomington IN) is placed in the intersphincteric plane to reinforce the closure of the fistula tract (BioLIFT procedure) was initially reported by Neal Ellis MD in repairing rectovaginal fistulas. Due to successful results (92% healed), this procedure expanded to treat complex fistula.

Table 1

Author	No.	Success (%)	Incontinence	Mean-follow-up(mo)	Recurrence(%)
Rojanasakul	18	94	0	-	6
Shanwani	45	82.2	0	9	11.1
Bleier	39	57	0	5	43
Aboulian	22	77	0	6	32
Sileri	18	83	0	4	17
Tsang	60	75	0	24	25
Rosato	27	85.2	0	14	14.8
Ooi	25	72	0	5.5	28

### Conclusions

The advantages of the LIFT procedure are: preservation of the anal sphincter, minimal tissue injury, and shorter healing time. The procedure is relatively easy to perform with a very short learning curve. LIFT can be repeated if fistula recurs.

**Key words:** anal fistula, LIFT procedure

---

34.

---

## Hand-assisted laparoscopic colorectal cancer surgery using transumbilical hand-port incision: single centre experience with 135 cases

Samalavicius Narimantas Evaldas

*Center of Oncosurgery, Oncology Institute of Vilnius University, Santariskiu 1, Vilnius, Lithuania*

### Background/Aim

Since its introduction in 1991, adoption of laparoscopic colectomy (LAC) to date has been slow because of its technical complexity, steep learning curve and prolonged operative times. To overcome the hurdles of LAC, Hand-assisted laparoscopic surgery (HALS) colectomy is introduced as an

alternative technique that addresses these problems while preserving the short-term benefits of laparoscopic colectomy.

### Methods

A prospectively maintained database was analysed for all HALS colectomies using transumbilical hand port incision from July 1, 2009 to April 1, 2013. All the patients who underwent HALS colectomy for colorectal cancer were included in this study. The patient's demography, operative details, short term and long term outcome were reviewed

### Results

Over fourty five months, 135 patients underwent hand-assisted laparoscopic colorectal resections for malignancy. The patients' mean age was 64 years (range 32-89), 60 male and 75 female. Cancer in sigmoid colon in 66 (48.9%) patients, upper rectal in 54 (40%), descending colon in 9 (6.7%), mid rectal in 5 (3.7%) and splenic flexure in 1(0.7%).

Type of operation	Complications	N=135	Management	Outcome
LAR with PME	Suture dehiscence (anastomotic leak)	1	Relaparotomy, lavage, covering ileostomy	Recovered
Left hemicolectomy	Perforation above the suture line with paracolic abscess	1	Relaparotomy, drainage of the abscess, covering ileostomy	Recovered
LAR with PME	Urinary retention	1	Epicystostomy	Recovered
TME	Urinary retention	1	Epicystostomy	Recovered
LAR with PME	Bleeding from the anastomotic line	1	Conservative	Recovered
Subtotal colectomy with ileorectal anastomosis	Stroke	1	Conservative	Recovered
LAR with PME	Myocardial infarction	1	Conservative	Recovered
Left hemicolectomy	Subacute intestinal obstruction	3	Conservative	Recovered
LAR with PME (conversion to open)	Septic pneumonia	1	Conservative	Died

Stage I colorectal cancer was present in 40 (29.6%) patients, stage II - in 37 (27.4%), stage III - in 47 (34.8%) and stage IV - in 11 (8.1%). Anterior rectal resection with partial me-

sorectal excision (LAR with PME) was performed on 54 (40%) patients, left hemicolectomy - 50 (37%), sigmoid colectomy - 22 (16.3%), total mesorectal excision (TME) with covering ileostomy - 5 (3.7%), and subtotal colectomy with ileorectal anastomosis - 3 (2.2%). The mean operating time was 110 minutes. The conversion to open surgery was required in 4 (2.9%) cases (massive adhesions - 2, unexpected tumor localization - 1, oncological reasons - 1). The median postoperative length of hospital stay was 7 (range, 3-31) days. Postoperative complications occurred in 11 (8.1%) cases and mortality was 0.7 % (1 case).

### Conclusion

HALS colorectal resection is a safe and effective procedure. The data in terms of length of hospital stay and operative time compare favorably with published data for LAC. With experience, it is associated with significantly reduced operative times. HALS effectively bridges the complexity divide between minimal access and open procedures.

**Key words:** colorectal cancer, HALS; colorectal resection, LAC, outcomes.

---

35.

---

## Laparoscopic APR at Tata Memorial Centre

Ashwin Desouza, Mahesh Goel,  
Shailesh V. Shrikhande

*GI and HPB Service, Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India*

### Background/Aim

Laparoscopy is associated with a number of immediate post operative patient benefits in terms of decreased post operative pain, faster return of bowel function, lower blood loss etc. all of which contribute to a shorter hospital stay. It is therefore not surprising that the last decade has seen an increased use of laparoscopy for colorectal cancer.

While the evidence for laparoscopic colon surgery is fairly robust with long term results of multicentre randomized trials being recently published, the data for laparoscopy for rectal cancer is less mature. The first randomized controlled trial to include patients with rectal cancer patients was the MRC CLASSIC trial. A higher incidence of circumferential margin

positivity in this trial was a matter of justifiable concern as margin positivity is an accepted independent predictor for local recurrence. However long term data from the MRC CLASSIC trial did not report a higher incidence of local recurrence or an inferior survival in this group of patients.

### Methods/patients

Following the MRC trial, two independent groups have reported randomized trials comparing laparoscopic and open surgery for rectal cancer. These two trials, namely the COLOR II and the COREAN trials have supported laparoscopy for rectal cancer in terms of oncological adequacy of resection and immediate post operative outcomes.

Since September 2009 we have maintained a prospective database of all patients undergoing laparoscopic colorectal surgery at the Tata Memorial hospital, Mumbai, India. From this time till February 2013 we have performed 42 laparoscopic abdominoperineal resections, with 64% of these patients male with a mean age of 47.2 years. Apart from one patient with anal canal melanoma, 2 patients with anal canal squamous cell carcinoma and one patient with a large adenomatous polyp at the anal verge, the remaining patients had biopsy proven adenocarcinoma. 76.3% of these patients received neoadjuvant chemoradiation. This series of 42 patients included patients of ASA Class 1 and 2 and with a mean BMI of 23.4Kg/m<sup>2</sup>.

The mean duration of surgery, blood loss and duration of hospital stay were 197.7min, 257.7ml and 6.8 days respectively. One patient was converted to the open approach (conversion rate 2.4%) because of posterior vaginal wall invasion. Thirty day morbidity was 11.9% (5 patients). One patient developed ischemia of the sigmoid and descending colon and was re-explored with resection of the ischemic bowel and formation of a transverse stoma. This patient however went into sepsis and expired on the seventh postoperative day. This was the only mortality in this series (2.4%). One patient complained of persistent perineal pain which was effectively managed with oral medication; 2 patients had post operative urinary retention requiring prolonged catheterisation and one patient developed perineal wound infection which healed by secondary intention.

The mean nodal yield was 12.1 nodes and all but three patients had negative circumferential resection margins (CRM). One patient with positive CRM underwent a palliative resection for a locally advanced, fungating anal canal melanoma and the other 2 patients had locally advanced disease post neoadjuvant therapy with threatened a CRM on MRI. Both

these patients had T4N2 disease with a positive CRM on final histopathology.

### Conclusion

The results of this consecutive series of patients are in keeping with reported literature and confirm the oncological adequacy of a laparoscopic approach for abdominoperineal resection.

**Key words:** colorectal cancer, laparoscopic APR, Tata memorial centre

---

36.

---

## Robotic surgery for rectal cancer at Yonsei University College of Medicine in Korea

Seung-Kook Sohn

*Department of surgery, Yonsei University College of Medicine, Seoul, Korea*

### Background/Aim

After the da Vinci® system was been cleared by the U.S. Food and Drug Administration for intra-abdominal surgery in 2000, this innovative surgical system has been applied in the management of colorectal disease. Because robotic surgery has several advantages when compared to laparoscopic surgery, such as its articulate movement, eliminating surgeon's tremor, and magnifies the structure with a 3-dimensional (3-D) view, it is of great interest whether the technical advantages of the robotic system could translate to better patient outcomes. Compared to colon surgery, rectal cancer surgery was regarded as a good candidate, which could be realized the benefit of robotic surgical system.

### Current Status of robotic surgery in Severance Hospital

Since the first da Vinci assisted cholecystectomy was performed in July 13th, 2005 in Severance hospital in Seoul, Korea, more than 8,700 cases robotic surgeries including over 700 cases of colorectal surgeries were performed so far. In 2008 January, Da Vinci Training Center had begun in Severance Hospital for the first time in South Korea. Since then, 752 medical co-workers visited our training center and participated in various training programs such as observation course, basic course, and also advanced cadaver

dissection course. In addition, the multi-specialty live surgery symposium, "Severance (Yonsei) da Vinci Live" was begun in 2007. All programs are composed of da Vinci assisted robotic surgery, and live surgery demonstrations from the experts of each fields. The 7<sup>th</sup> Symposium will be held in Severance Hospital at 29th-31st August, 2013.

### Methods/Results

**Evidence of robotic surgery for colorectal disease.** The several of comparative studies were performed to prove the potential benefits, such as decreased morbidity, better specimen quality and the improvement of oncologic outcomes. In most of studies, the overall complication rate, functional outcome, and oncologic outcome after robotic rectal cancer surgery were comparable to laparoscopic surgery. The safety and feasibility of robotic rectal surgery were demonstrated but it was hard to find out the significant benefit of robotic surgery, whereas the cost of robotic surgery was high. For the reason, colorectal surgeons hesitated to adapt the robotic rectal surgery in their daily practice. In the comparative study among open(OS), laparoscopy(LS), and robotic surgery(RS), using propensity scores for adjustment of several variables, a well-balanced cohort with 165 patients in each group, was created by matching each patient who underwent RS as the study group with one who underwent OS or LS as the control group. In this study, we could find out the benefit of robotic surgery, in terms of decreased anastomosis leakage, less involvement of circumferential resection margin, and decreased acute voiding difficulty. This study was performed with the patients who had rectal cancer within 10 cm from the anal verge. The lesson of this study was that the benefit of robotic surgery for mid-low rectal cancer, which is quite demanding procedure, could be maximized.

We also performed the study regarding the functional outcome after robotic surgery. This study was a prospective cohort study and 69 patients who underwent laparoscopic TME (n = 39) or robotic TME (n = 30) were prospectively enrolled. As a result, the total IIEF (International Index of Erectile Function) score was significantly decreased 1 month after surgery in both laparoscopy and robotic surgery groups, but the recovery was faster in the robotic surgery group. This study concluded that Robotic TME for rectal cancer is associated with earlier recovery of voiding and sexual function compared than Laparoscopic TME.

### Conclusions

In our experience, the benefit of robotic surgery was maximized in carefully selected patients. Although this new tech-

nique should be validated with more objective data, it is clear that the application of robotic surgical system would be expanded in the management of colorectal cancer.

**Key words:** rectal cancer, robotic surgery

---

37.

---

## The outcome of primary and secondary pouch surgery in familial adenomatous polyposis

Steffen Bülow

*The Danish Polyposis Register, Dept. of Surgical Gastroenterology, Hvidovre University Hospital, Copenhagen, Denmark*

### Background/Aim

The aim of the study was to evaluate intraoperative difficulties, complications, and long-term bowel function in polyposis patients operated with conversion of an ileorectal anastomosis into an ileoanal pouch, compared with patients with a primary ileoanal pouch operation.

### Method

National register based retrospective study with clinical follow-up and a questionnaire concerning long-term bowel function.

### Results

Fifty-nine (71%) patients had a primary pouch operation and a secondary pouch procedure was performed in 24. The median follow-up was 123 months (range 0-359). Intraoperative difficulties were seen in 0/59 primary operations versus 9/25 secondary (p<0.001). Postoperative complications within one month occurred in 6/59 primary and in 0/24 secondary operations (p<0.001), and late surgical complications in 8/55 primary and 8/24 secondary operations (p=0.13). No differences were seen in bowel function between the two patient groups.

### Conclusion

Reoperation with proctectomy after a previous IRA and conversion to an IPAA is feasible in FAP patients with similar morbidity and functional results as seen after a primary pouch operation.

**Key words:** adenomatous polyposis in familial, pouch surgery, outcomes

38.

## Surveillance for urinary tract cancer in Lynch Syndrome

Torben Myrhøj and Inge Thomsen Bernstein

*The Danish HNPCC-register,*

*Department of Gastroenterology and Clinical Research Center,  
Hvidovre Hospital, Copenhagen*

### Background/Aim

Hereditary non-polyposis colorectal cancer (HNPCC) is an inherited multiorgan cancer syndrome, which when caused by a germ line mutation in the mismatch repair (MMR) genes is known as Lynch Syndrome (LS). Mutation carriers are at risk for developing cancer primarily in the colon, rectum and endometrium.

Several epidemiological studies have demonstrated that urinary tract cancer (UTC) is integrated in LS with the highest lifetime risk for male MSH2-mutation carriers. The majority of the studies find the increased risk of urothelial cancer in the upper urinary tract i.e. the renal pelvis and the ureter, with a lifetime risk varying from a few per cent to 12%. UTC seems to be the third most frequent cancer (5%) after colon and endometrial cancer in LS.

It has been discussed among researchers and clinicians whether or not screening for urological tumours should be included in the surveillance programme in LS, and if so what screening procedures are justifiable.

Only a few studies have systematically evaluated the outcome of an established UTC screening programme in HNPCC patients. Myrhøj et al. analysed the outcome of biennial urine cytology (UC) in persons from LS, Amsterdam I/II and "Amsterdam suspected" families and found UC useless as screening procedure. The sensitivity of diagnosing asymptomatic UTC was only 29% and only 0.1% of the examinations lead to detection of an asymptomatic UTC. Additionally in 1% of the procedures, there was a false positive screening result leading to unnecessary invasive diagnostic procedures. Zachhau studied the outcome of screening in a single urologic department following 20 HNPCC-patients prospectively with a more intensive and invasive program including one initial contrast CT-scan followed by biannual flexible cystoscopy and UC. In total 26 CTs and 48 flexible cystoscopies with UC were carried out and two patients with asymptomatic cancers in the ureter were found. The overall conclusions in both studies were that evidence for systematically screening in LS is lacking.

### Conclusions

There is a moderate increased risk of UTC in LS. Currently there is a lack of knowledge on which screening programme to establish, if any at all. It is recommended that screening for UTC in LS only should be performed in clinical trials or with a systematic reporting to a HNPCC-register for future evaluation

**Key words:** urinary tract cancer, Lynch syndrome, surveillance

39.

## Five year survival after sigmoid resection (low ligation) versus left hemicolectomy (high ligation) for stage I-III sigmoid carcinoma: a retrospective study.

Vytautas Vitkauskas,

Narimantas Evaldas Samalavicius

*Center of Oncosurgery, Oncology Institute of Vilnius University,  
Santariskiu 1, Vilnius, Lithuania*

### Background/Aim

There is still a discussion whether or not high ligation of inferior mesenteric artery and vein during surgery for sigmoid cancer has survival benefit compared to low ligation (sigmoid branches). Both operations are used today. The aim of our study was to evaluate 5 year survival after sigmoid resection (low ligation) in comparison with left hemicolectomy (high ligation) for stage I-III sigmoid cancer retrospectively.

### Methods/Patients

We reviewed 127 patients who were operated on for stage I-III sigmoid cancer during the period of 5 years (2003 01 01 - 2007 12 31) at the Oncology Institute of Vilnius University. Left hemicolectomy was performed in 107 cases (group 1), whereas sigmoid resection was performed in 20 cases (group 2). In group 1 there were 46 men and 61 women, mean age was 66 (std. dev. 9,964, min. 40, max. 84) and mean duration of the operation was 106 min. (std. dev. 39,916, min. 55, max. 305). In group 2 there were 10 men and 10 women, mean age was 66 (std. dev. 7.816, min. 50, max. 78) and mean duration of the operation was 118 min. (std. dev. 42.855, min. 65, max. 225).

### Results:

Hospital stay was 17 days (std. dev. 4.995, min. 7, max. 37) in group 1 and 15 days in group 2 (std. dev. 4.895, min.

10, max. 30). There were 27 postoperative complications in group 1 (25.2%) and 2 in group 2 (10%) ( $p < 0.005$ ). 5 year survival in group 1 was 72.9%, in group 2 - 70% ( $p > 0.005$ ).

### Conclusions

There was no difference in operating time and other variables between the groups, except higher postoperative complication rate and a longer hospital stay after sigmoid resections in comparison with left hemicolectomy. Five year survival rate was not different between the groups, however.

**Key words:** I-III sigmoid carcinoma, resection, low ligation, high ligation, five years survival

---

40.

---

## Five year survival after colon cancer surgery in relation to lymphnode harvest: a retrospective study of 356 patients operated for stage I-III colon cancer

Daiva Zdanavice, Narimantas Evaldas Samalavicius

*Center of Oncosurgery, Oncology Institute of Vilnius University, Santariskiu 1, Vilnius, Lithuania*

### Background/Aim

Adequate nodal harvest ( $\geq 12$  lymph nodes) in colorectal cancer has been shown to optimize staging. In a retrospective study, we investigated if higher lymph node harvest ( $\geq 12$  lymph nodes) during surgery had an impact on 5 year survival in patients with stage I-III colon cancer.

### Methods

A retrospective case study was performed, which included 356 cases ( male 45,8 %, female 54,2%). All patients underwent resection for primary colorectal cancer, stages I-III, during the period of 5 years (2003.01.01-2007.12.31) at the Oncology Institute of Vilnius University.

### Results

Among 356 patients, the median lymph node harvest was  $11,8 \pm 6$ . Higher lymph node harvest ( $\geq 12$  lymph nodes) was performed in 46.6 % cases (Group 1), and in 53,6% of cases lymph node harvest was less than 12 l/n (group 2). The

overall node positivity rate was 37.6%. Incidence of positive lymph nodes did not differ in two groups: 50.7 % of positive nodes were harvested in group 1 and 49.3% in group 2. Overall 5-year survival was 73.3%: respectively 77.1% in Group 1 and 70.0% in group 2 ( $p = 0,083$ ). The 5- year survival rate in stage III colon cancer patients was 65.1%: respectively 70% in group 1 and 59.7% in group 2 ( $p = 0,124$ ).

### Conclusions

Higher lymph node harvest was associated with a tendency to improved overall survival in colon cancer. However, the differences between the groups were not statistically reliable.

**Key words:** I –III stage colon cancer surgery, five years survival

---

41.

---

## Patient delaying factors in the diagnosis of symptomatic rectal cancer

F. Ruiz-Healy, M. Arroyo-Cazarez

*Service of Coloproctology and Unit of Coloproctology. Centro Hospitalario Sanatorio Durango, Mexico City, Mexico*

### Background/Aim

Despite information, modern diagnostic tools, exams and protocols, symptomatic patients with rectal cancer continue to-date; present diagnostic delay and frequently are seen in advance stages of disease. Patient delay plays an important part in late diagnosis. Analyze patient delay of symptomatic rectal cancer treated in a Coloproctology service within a private teaching hospital in Mexico City.

### Methods

A retrospective chart review on patients with rectal cancer from January 2006 to December 2010 was performed. Inclusion criteria consisted of histological diagnosis of adenocarcinoma and tumor limited within 15 cm of anal verge. Exclusion criteria consisted of age younger of 40 years and recurrent cancer. Parameters included age and sex, signs and symptoms, patient behavior, and time from onset of symptoms to first visit to a physician. Results were compared to world literature identified from electronic databases.

### Results

67 patients were included within the protocol. (m/f 40/27) and mean age of 57 (range, 42-93) years. Most common

symptom was bleeding (76%). Other symptoms included rectal pain (27%); constipation (9%) and diarrhea (5%). Vague abdominal symptoms, weight loss, rectal secretion and fecal impaction were also reported. Forty five percent of patients had multiple symptoms. Patient's behavior responded in two ways. Seven directly consulted a physician and sixty self-diagnosed their symptoms. Assumed diagnosis was hemorrhoidal diseases in fifty two, colitis in five, intestinal parasitosis in four, intestinal constipation in three, anal fissure in two and prostate problems in one patient. Initial treatment was with over-the-counter medications. These included hemorrhoidal creams, medication for colitis, intestinal parasitosis and laxatives. Patient delay from first symptoms to consulting a physician, ranged from four days to twelve months, with a mean average of 25 weeks.

### Conclusions

Findings of this study demonstrated that 88 % of patients erroneously credited their symptoms to common colorectal diseases. Patients delaying diagnosis of rectal cancer, is a concern that has remained almost constant for decades in world literature. Health education on initial symptoms of rectal cancer should be actively emphasized in the general population.

**Key words:** symptomatic rectal cancer, diagnosis

---

42.

## Initial results after local excision followed with postoperative radiation for uT1N0M0 rectal cancer

LH, Ashari, N Alsanea

*Section of Colon & Rectal Surgery, King Faisal Specialist Hospital & Research Center-Riyadh, Saudi Arabia*

### Background/Aim

Assess local recurrence after local excision and postoperative radiation for non-metastatic ultrasonographic stage of T1N0M0 rectal cancer.

### Methods

The colorectal database at King Faisal Specialist Hospital & Research Center-Riyadh was reviewed for all rectal cancer cases that underwent local excision for rectal cancer and postoperative radiation for ultrasonographic stage T1N0M0 for

the period 2003-2011. Local excision was performed only in patients who could not undergo a sphincter-saving procedure or were not fit to have major radical surgery due to severe co-morbidities. The demographic data, clinical, pathologic, recurrence and survival data were also reviewed.

### Results

There were 11 men and one woman. Mean age at presentation was 62 years. The tumors were 3.6 cm away from the anal verge. After resection, the tumors had a median diameter of 3.5 cm (range: 1.0- 5.0 cm). All the tumors had favorable pathology and negative resection margins. The tumor cells were never less than 3 mm from any of the resection margins. All resections were full thickness. One sample contained 2 negative lymph nodes. Median Follow up was 36 months. All patients received adjuvant radiation. One tumor recurred in a lymph node in the meso-rectum; recurrence 8%. Overall 3-year survival was 100%, 3-year disease free survival was 91%.

### Conclusion

Local excision followed with postoperative radiation is associated with low recurrence rate and acceptable survival.

**Key words:** rectal cancer, local excision, postoperative radiation, T1N0M0

---

43.

## Tiesiosios žarnos iškritimas: rektopeksijos metodikų vertinimas

Saulius Švagždys<sup>1</sup>, Donatas Černiauskas<sup>1</sup>,  
A. Bunevičius<sup>2</sup>, Linas Venclauskas<sup>1</sup>,  
Antanas Mickevičius<sup>1</sup>, Dainius Pavalkis<sup>1</sup>

<sup>1</sup> Lietuvos sveikatos mokslų universitetas, Chirurgijos klinika

<sup>2</sup> Lietuvos sveikatos mokslų universitetas, Neurochirurgijos klinika

### Įvadas/tikslas

Tiesiosios žarnos iškritimas yra vyresnio amžiaus žmonių liga. Šio darbo tikslas – įvertinti atkryčių po rektopeksijų dažnį, vidurių užkietėjimo ir išmatų nelaiikymo skalių pokyčius prieš ir po operaciją skirtingus, taikant kelis chirurginius metodus.

### Tyrimo medžiaga ir metodai

Atlikta retrospektyvinė 79 pacientų 1997–2010 metais operuotų dėl tiesiosios žarnos iškritimo Lietuvos sveikatos moks-

lų universiteto Chirurgijos klinikoje analizė. Priklausomai nuo operacijos tipo, pacientai suskirstyti į dvi grupes – operuoti per tarpvietę ir atliekant laparotomiją. Per laparotomiją operuotų grupė buvo suskirstyta į tik rektopleksijos ir rezekcijos pogrupius. Buvo vertintos vidurių užkietėjimo ir išmatų nelaikymo skalės prieš ir po operaciją, ligos atkryčio dažnis bei komplikacijos.

### **Rezultatai**

Buvo atlikta dvidešimt viena (27%) tarpvietinė operacija, trisdešimt viena (39%) rektopleksija ir dvidešimt septynios (34%) riestinės žarnos rezekcijos pacientai stebėti 54,8±34,1 mėnesį. Buvo stebėti tik keturiasdešimt (51%) pacientų. Per šį laikotarpį nustatyti penki atkryčio atvejai (6.3%). Per laparotomiją operuoti pacientai buvo statistiškai reikšmingai

jaunesni ( $p<0.001$ ), jiems nustatyta žemesnė ASA klasė prieš operaciją ( $p=0.015$ ). Tačiau tyrimo metu išmatų nelaikymo bei vidurių užkietėjimo skalių skirtumo nei prieš nei po operacijos tarp grupių nenustatėme.

### **Išvados**

Taikant įvairias operacines metodikas, rezultatai yra panašūs, galima teigti, kad operacijos pasirinkimą lemia chirurgo sprendimas. Tačiau matomos tendencijos, kad vyresnio amžiaus pacientams atliekamos tarpvietinės rektopleksijos, tuo tarpu jaunesniems pacientams dažniau atliekamos abdominalinės operacijos.

**Reikšminiai žodžiai:** tiesiosios žarnos iškritimas, tarpvietės operacijos, transabdominalinė rektopleksija, atkryčių dažnis.