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# 4<sup>th</sup> Malaysian Colorectal Conference

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“Colorectal Surgery  
– Current Trends”

Sunway Lagoon Resort Hotel  
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Organised by



Malaysian Society of Colorectal Surgeons

SOUVENIR PROGRAMME & ABSTRACT BOOK

## HOW I MANAGE COMPLEX FISTULA IN ANO

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Some 50 percent of all ano-glandular septic events are known to result in a fistula in ano (1). Some may result in a complex fistula. By convention, a complex anal fistula is one that is likely to become complicated by anal incontinence after surgical treatment (2).

The prime goal of treatment of a complex fistula is to achieve complete cure whilst minimizing the risk of incontinence. A visual map of the fistula track is the cornerstone to a successful result. While the external opening of a fistula is often obvious, clinical evaluation should aim to identify the corresponding internal opening and to identify all tracks, primary and secondary, that connect these openings. Deep seated fluid collections must be identified and drained. Either anal ultrasound or MR imaging are useful in identifying the location of fluid collections (3,4). Goodsall's rule has been shown to be of little value in management of complex anal fistulas (5). Furthermore, identification and treatment of underlying disorders such as Crohn's disease, which may only be confined to the ileo-caecal region in association with a fistula in ano, tuberculosis and diabetes mellitus must be in tandem with treatment of the anal fistula. Persons who are immuno-compromised; those receiving chemotherapy, patients with leukaemia and HIV are also likely to have recurring fistulae.

Ultimately, surgical treatment revolves around basic principles; excise fistula tracks, if this is safely possible without injury to the anal sphincters, eradicate sepsis and achieve occlusion of the internal opening. This may be achieved by either core anal fistulectomy or staged seton fistulectomy. Deep seated collections may be drained using catheter drainage or seton drainage followed by definitive surgery. Whenever possible, in the absence of overt sepsis, I have achieved primary closure of the fistula wound or at least the anal margin, to avoid scar formation at the anal verge which may interfere with symmetrical closure of the anal orifice and result in anal soiling despite preservation of the anal sphincter in-tact. Fibrin glue and glue impregnated collagen plugs have been employed more latterly. These techniques have constraints and are not free of recurrence.

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## FISTULA IN ANO: SPHINCTER SAVING OPERATIONS

**Arun Rojanasakul**

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Fistulotomy is the most widely practiced operation for fistula in ano from ancient to present. For simple fistula, the outcome of fistulotomy is acceptable with low recurrent rate, and minor degree of incontinence. For complex fistula in ano, fistulotomy can cause unacceptable incontinence. For complex fistula in ano, many alternatives are recommended such as seton, fibrin glue, fistula plug and sphincter saving operation.

The external sphincter saving techniques are Park fistulotomy, modified Hanley fistulotomy, rerouting fistula tract follow by fistulotomy.

Total sphincter saving techniques are core out fistula tract and closure of internal opening with various techniques e.g. mucosal advancement flap, anoderm advancement flap, internal anal sphincter flap, intersphincteric approach and suture of internal anal sphincter defect (internal opening).

Data from King Chulalongkorn Memorial Hospital show that the most common complex fistula in ano is the ischiorectal horseshoe type. Our preferred technique for this particular type of fistula in ano is core out fistula tract and closure of internal opening with internal anal sphincter flap.

## SYMPOSIUM 1

### HAEMORRHOIDS – MANAGEMENT IN PREGNANCY AND IN THE IMMUNOCOMPROMISED PATIENT

**Peter Lee**

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#### IN PREGNANCY

- Haemorrhoidal problems may be precipitated or aggravated in as many as 40% of antenatal patients, due to constipation and straining, pelvic venous obstruction by the gravid uterus and hormone induced increased vascularisation<sup>1</sup>
- Most haemorrhoidal symptoms will be managed expediently by the general practitioner or the obstetrician using a conservative management protocol involving increased fibre and fluid, local symptomatic relief and behavioral modification<sup>2</sup>  
The use of flavonoid extracts should be treated with caution.
- Failure in conservation management should mitigate referral to a surgeon with a colon and rectal interest. He/she should confirm the diagnosis by full ano rectal examination and ensure that adequate conservative management and reassurance is provided.
- In less than 0.2% of pregnant patients interventional therapy is required. This is likely to be for intractable pain and should involve limited ligation and excision usually under local anaesthetic – delayed if possible to the 3<sup>rd</sup> trimester. The patients, the obstetricians and surgeons worries regarding miscarriage, foetal abnormality, episiotomy problems and delayed wound healing appear unfounded.<sup>3</sup>
- Haemorrhoidal prolapse in the immediate puerperium is usually consequent on a difficult delivery with decreased anal sphincter tone. Conservation management is appropriate; if again symptoms are intractable limited ligation and excision has proven safe and effective.

#### IN THE IMMUNOCOMPROMISED PATIENT

- Usually this involves patients receiving chemotherapy for cancer, leukaemia, lymphoma and HIV / AIDS patients
- ‘Haemorrhoidal’ symptoms may be mimicked by other lesions (eg. Leukaemic lesions, ano rectal ulcers and AIDS related proctitides so the diagnosis must be correctly established.
- In the non HIV/AIDS immunocompromised patient the basis of management is non interventional when ever possible but is decided on by the degree of immunosuppression not the cause<sup>4</sup> i.e. severe haemorrhoidal symptoms v low degree of suppression may mitigate towards intervention
- Anorectal diseases (warts, ulcers, sepsis and neoplasia) occurs in about 6% of all HIV positive patients but symptomatic haemorrhoids in only about 6-8% of these
- In the otherwise non symptomatic HIV positive patients (HIV Group I + II ), interventional management including injection sclerotherapy, rubber band ligation, infrared coagulation and ligation and excision are acceptable if symptoms warrant.<sup>5</sup> Average life expectancy would mitigate in favour of treatment
- Interventional treatment for haemorrhoids in the AIDS patients (HIV Group III + IV) should be avoided

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## **DIAGNOSIS AND TREATMENT OF INTESTINAL OBSTRUCTION: THE LONG AND THE SHORT OF IT**

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Although historical references regarding intestinal obstruction (IO) date back to Hippocrates and Praxagoras (4<sup>th</sup> century BC, creation of enterocutaneous fistula for obstruction), management of this problem was considered frustrating and uniformly fatal until the early part of the 20<sup>th</sup> century. Subsequently, the beneficial effects of intravenous fluid hydration, use of intestinal tubes for decompression and antimicrobials were discovered and became hallmarks in the management of IO. The discovery of x-rays contributed immensely to the diagnosis of IO while advances in surgical technique, anesthesia, transfusion, critical care and nutrition proved essential in reducing the mortality and morbidity from operative treatment of this condition. Despite these advances, mortality related to delayed intervention for strangulated IO remains significant.

Much of the current investigative work related to IO deals with the utilization of more sophisticated diagnostic procedures (contrast studies, ultrasound, CT, MRI, etc.) in order to improve diagnostic accuracy. Surgical treatment is also shifting towards more aggressive use of primary resection procedures and use of laparoscopic techniques. There is also increasing interest in the pathogenesis, prevention and treatment of postoperative adhesions, which now constitute the most common cause of IO. Future directions are seen to revolve around the use of more accurate diagnostic modalities, minimally adhesive surgical techniques and newer agents to prevent adhesion formation and subsequent surgery.

Despite these advances, the diagnosis and treatment of IO continues to be a challenging problem that will continue to be managed by surgeons now and in the future. There appears to be no substitute for meticulous monitoring of the patient's clinical condition, appropriate timing of surgical intervention and sound surgical technique in ensuring optimal outcomes for patients with IO.

## **MANAGEMENT OF LOWER GI BLEEDING**

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The management of lower gastrointestinal bleeding (LGIB), especially of the massive type, remains a challenging problem for surgeons. It requires an efficient, disciplined and orderly evaluation; choosing from among several sophisticated diagnostic tools while concurrently stabilizing the patient and planning definitive therapy.

The epidemiology of LGIB in the Southeast Asian region would be somewhat different from those described in the Western literature. A carefully taken history however, will continue to provide diagnostic hints as to the cause of the acute LGIB; while the physical examination remains useful in determining the extent of bleeding. Successful management mandates accurate localization of the bleeding before definitive treatment and the recommended approach depends on the rate and activity of bleeding.

Appropriate indications, advantages, limitations and results on the use of the following diagnostic/treatment modalities shall be described: Colonoscopy, Nuclear scintigraphy, selective mesenteric angiography (with vasopressin infusion, supraselective embolization), small bowel enteroscopy, and wireless capsule endoscopy. Despite these advances, surgery remains indicated in approximately 5% of cases of LGIB. Directed segmental resection remains the treatment of choice for most situations that require surgery. There is increasing evidence supporting the efficacy and safety of total colectomy for unidentified or bilateral bleeding sites.

## MANAGEMENT OF COMPLICATED DIVERTICULITIS

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Acquired left colonic diverticular disease as opposed to congenital right colonic diverticular disease is known to increase with age (1). The condition is more common in the west. Between 10 and 25 percent of patients with diverticulosis may experience inflammatory complications (2). Management of diverticulitis in the majority is by bowel rest, intravenous fluids and antibiotics with subsequent dietary modification.

Complicated diverticulitis may present in an acute form – a result of perforation or in a more chronic form where fibrosis secondary to inflammation results in luminal narrowing and varying degrees of large bowel obstruction. In a proportion of patients, acute diverticular perforation is followed by localized sepsis and erosion into adjacent organs resulting in an internal fistula.

Hinchey classified acute diverticular perforation into 4 types; Hinchey type 1- a para-colic abscess, type 2- distal or pelvic abscess, type 3- purulent peritonitis and type 4 – faecal peritonitis. Treatment of types 3 and 4 is by initial resuscitation followed by laparotomy, peritoneal lavage, and segmental resection of the diseased colon. The type of resection and whether or not to divert an anastomosis will depend on the ASA status of the patient and experience of the operating team. Intensive postoperative management holds the key to successful recovery. Treatment of a para-diverticular abscess is initially by antibiotics. Lack of clinical improvement after 2 to 3 days of antibiotic therapy and persistent fever warrants evaluation by contrast enhanced computerized tomography. An abscess of average diameter 4cm or less, is likely to resolve with antibiotics compared with an average abscess diameter of 6.5 cm or greater which will require image guided percutaneous drainage (3). Internal fistulous disease and impending large bowel obstruction is best dealt with by operation in an elective setting.

Following segmental resection, recurrent diverticulitis has been reported in about 3% and is known to result from residual diverticular disease distal to the previous resection and anastomosis, not from diverticular disease in the proximal colon (4). Guidelines for prophylactic sigmoid colectomy to avoid a reported mortality rate of up to 10% if operation were undertaken in the acute setting are; 2 or more hospital admissions for acute diverticulitis, one hospital admission for treatment of diverticulitis complicated by perforation, bowel obstruction, presence of urinary tract symptoms and in patients less than 50 years old, because younger patients are believed to develop complications of diverticulitis more frequently than those >50years (5). The presence of a mass in association with diverticulitis where it is not possible to rule out carcinoma is also an indication for prophylactic colectomy. Localised Crohn's disease is another possibility with an increased risk of anastomotic leakage.

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## MANAGEMENT OF 'POSITIVE MARGINS' AFTER RESECTION FOR COLORECTAL CANCER

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In colorectal cancer surgery the status of the distal and radial resection margins are important prognostic factors in determinant of cancer outcome. Local recurrence following colorectal cancer resection is associated with implantation of exfoliated tumor cells. Inadequate surgical technique may result from spillage of tumor cells into the peritoneal cavity causing transperitoneal tumor implantation, and is associated with increased local recurrent rate and decreased long-term survival. Therefore, achieving an adequate tumor-free margin by practicing good en-bloc operation is important.

When pathologist reports a positive margin means an inadequate surgery, so dealing with patient with positive margin after resection of colorectal cancer is a very challenging to surgeon. Positive margin is frequently associated with poor surgical technique. Therefore, the key to treat 'positive margin' is to understand the general principle of oncologic colorectal surgery, and develop a careful and gentle surgical technique. Inadequate resection of colorectal cancer is a major contributor to local recurrence, hence, obtaining an adequate distal margin and radial margin contribute to low local recurrent rate and improve survival rate. Another importance of avoiding positive margin is to perform adequate preoperation staging of colorectal cancer for evaluation of its respectability. When management of a large T3 or T4 rectal tumor, the patient should be submitted to preoperative combined radiotherapy and chemotherapy ( CCRT ) to shrink the tumor before curative surgery. This can reduce high local recurrent rate after resection of rectal cancer and consequently improve the overall survival. Finally, if present of positive margin after curative surgery, a complete staging evaluation is needed before any treatment plan is necessary, the evaluations including physical examination, blood investigations, endoscopy, and image studies. The goal of such evaluations is to select patients for aggressive reoperation and multimodality therapy.

In conclusion, surgeon variety influences the outcome of colorectal cancer. Currently data suggest specialization is one of important factory to achieve a better out in colorectal surgery. One must remember that poor surgery cannot be replace by good chemotherapy and radiotherapy.

## MANAGEMENT OF ANASTOMOTIC LEAKAGE

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Anastomotic leakage is a serious complication of colorectal surgery, and the mortality rates can be as high as 40%. The rate of anastomosis leakage is varies in center, ranging from 4.2% to 26%. The rate of leakage increases as the anastomosis distance to the anal verge decreases. Anastomosis leakage rate is associated by patients' general condition as well as local regional condition where the anastomosis is created. The reasons causing anastomotic leaks include: 1. tension of the suture line; 2. poor blood supply of the intestine; 3. technical error such as imprecise suture placement or staple technique; 4. poor nutrition patient, and serum albumin level of less than 3.0 g/L; 5. usage of corticosteroid; 6. peritonitis; 7. colorectal obstruction patients; 8. preoperative transfusion of more than two units of packed red blood cells.

Detection of leakage can be done intraoperatively, the pelvic cavity is filled with saline and by using proctoscope or a bulb syringe to insufflate the rectum with air or povidone-iodine installation to rectum under mild pressure. These methods can localize the leaks and repair can be done simultaneously. Proximal diversion is to protect the distal anatomosis is a standard concept of rectal surgery. This can allow additional time for an anastomosis to heal, and to minimize the complications caused by leak. As far as postoperation detection of leak is concerned, the leaks can be detected by physical examination or the use of proctoscopy or radiographic contrast study.

The management of anastomotic leakage depends on the clinical condition of the patient. Asymptomatic patient often require no treatment. Percutaneous or transanal or transvaginal drainage can be use in patient without significant systemic toxicity. In patient with systemic toxicity operative exploration is necessary. Type of procedure should be depending on patients' general condition.

## MANAGEMENT OF THE COLORECTAL ANASTOMOTIC STRICTURE

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A colorectal anastomotic stricture is a narrowing that generally precludes passage of a standard 13 mm diameter colonoscope. Clinically significant anastomotic strictures are known to occur more frequently in extra-peritoneal anastomoses and has been reported in up to 30 percent (1). Underlying causes for anastomotic stricture are ; ischaemia, partial or complete anastomotic dehiscence with localized sepsis and fibrosis, previous irradiation, inflammatory bowel disease, proximal diversion of the faecal stream and recurrent rectal cancer. In a systematic review of stapled versus handsewn colorectal anastomosis, Lustosa et al (2) reported stenosis was more frequent after the stapled vs. handsewn anastomosis in 1233 patients evaluated. (p,0.05).

Patients with anastomotic stricture present with progressive constipation and frequent small stools. Digital examination of the anastomosis, if within reach, will usually help identify the narrowing at the anastomosis which prevents trans-anastomotic advancement of the digit. It is essential to differentiate an anastomotic web that is often present when a diverted anastomosis is examined before attempting proximal stomal closure. Recurrent cancer at the anastomosis is usually readily recognized by an experienced examiner but biopsy is essential to confirm cancer at the site. In experienced hands, endorectal ultrasound of the anastomosis, if possible, is of complimentary value in identifying cancer at the anastomosis. Water soluble contrast studies of the anastomosis, particularly in the more proximal anastomotic stricture will provide information on its length.

For low anastomotic strictures, strictureplasty is an attractive option. This may be performed using a cold scalpel or electrocautery, in four quadrants, to include the full thickness of the fibrotic stricture with negligible risk of peritonitis because of the extra-peritoneal location of the anastomosis. Strictureplasty is often followed by regular dilatation of the anastomosis to help maintain patency. A systematic review of the management of benign strictures of the rectum has shown that balloon dilatation was the most frequently used intervention (3). Often, balloon dilatation had to be repeated to restore normal bowel function. However, trans-anal stapled strictureplasty was reported to have achieved the best results in this study. Lesser known novel techniques which appear to have satisfactory results are microwave probe treatment of a stricture and balloon dilatation in association with injection of triamcinolone acetate. A long length stricture, such as that associated with irradiation, is best treated with a self expanding metal stent.

With minimally invasive techniques now well established, re-operative surgery has been shown to be required in only about 28% of patients (1). Re-operative surgery is technically difficult, bears the risk of significant ureteric and autonomic nerve injury and pre-sacral haemorrhage. Ultimately, when risk is pitted against benefit, a permanent colostomy may be a sensible option and the patient must be sensitized to such an option.

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## **COMPLICATIONS OF STOMAS AND MANAGEMENT: NECROSIS, PROLAPSE, RETRACTION, STENOSIS AND PARASTOMAL HERNIAS**

**Ooi Boon Swee**

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Construction of a enteric stoma is a commonly performed procedure despite the advent of new stapling devices and reconstructive surgical procedures to preserve the anal sphincters. Complication may occur during the creation of stomas intraoperatively and also postoperatively in terms of its function and its effect on the patient's physical, social, emotional and sexual functions. Common surgical complication of stomas include necrosis, prolapse, retraction, stenosis and parastomal hernias. Careful consideration for the need of a stoma should be made before a stoma is created. Certain factors such as advanced age, malnutrition, obesity and inflammatory bowel disease are known to predispose to stoma complications. Good surgical technique and dedicated support and care from enterostomal therapy nurses are essential to reduce or prevent the complications. The management of stoma complications involves correcting the underlying predisposing factors and requires a multidisciplinary support from the surgeons, enterostomal therapy nurses, dietician and family members.

### VIDEO SESSION 1

## **FANSLER HEMORRHOIDECTOMY**

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Fansler's hemorrhoidectomy is currently the most widely used technique in Thailand. In 1931 Fansler described a technique of hemorrhoidectomy in which the dissection was conducted in an anatomic method (intra-anal anatomic dissection). The key to this technique is using the Fansler anal speculum, which is 3 cm in diameter and 7 cm in length. The entire hemorrhoidal tissues, along with the redundant skin, can be dissected easily in their normal anatomic location. There is no need to pull the hemorrhoidal pedicle toward the anus for suturing because the exposure is excellent all the way to the apex of the wound. The technique was popularized by Mineapolis colorectal surgeon group and introduced to Thailand by Dr. Santhat Nivatvongs since 1985.

We modified Fansler's anal scope by removed its handle and decreased the diameter to 2.8 cm. The handleless operating scope is very convenience to rotate to any direction.

Our closed hemorrhoidectomy is aimed for primary healing of the wound and we almost always achieved this goal. The steps of our technique are

- Preoperative prepare the patient with intravenous sedation
- Jackknife position
- Local anesthesia with 0.5% xylocaine plus 1:200,000 adrenaline
- Excise hemorrhoid tissue with heavy scissors by Pull-Press-Cut technique
- No pedicle ligation
- Suture with Vicryl 4/0 rapide
- Meticulous suture, avoid overlapping of the wound edge is the secret to ensure primary wound healing
- Postoperative care : clean anus with tap water twice a day, Sitz bath is not recommended

Our 20-year experience of around ten thousand cases, the technique has been used with great satisfaction.

## HEMORRHOIDECTOMY WITH LIGASURE™

**Arun Rojanasakul**

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Fansler's closed hemorrhoidectomy has been the procedure of choice in colorectal division, King Chulalongkorn Memorial Hospital for more than twenty years with excellent result. However, the most difficult and time-consuming step of this technique is to stop bleeding and suture the intraanal tissue.

Recently, one of our staff, Pattana-arun J, combined the Ligasure™ with our routine hemorrhoidectomy, and found that the technique is simple, less operating time, easy to teach, to learn and to practice.

The steps of this modified technique are

- Preoperative prepare the patient with intravenous sedation
- Jackknife position
- Local anesthesia with 0.5% xylocaine plus 1:200,000 adrenaline
- Excise hemorrhoid tissue with heavy scissors by Pull-Press-Cut technique to dentate line level.
- Clamp the hemorrhoidal tissue above the dentate line with Ligasure™, apply the current, cut the hemorrhoid tissue above the ligasure mark.
- Complete closure of the wound below the dentate line with Vicryl 4/0 rapide
- Meticulous suture, avoid overlapping of the wound edge is the secret to ensure primary wound healing
- Postoperative care : clean anus with tap water twice a day, Sitz bath is not recommended

## RADICAL RESECTION OF PRESACRAL TUMOR: HOW WE DO IT

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Presacral or retrorectal tumor is a rare but interesting lesion. Surgery is considered the best curative method. However, surgery for large lesion is extremely difficult with high morbidity and high recurrence. Rojanasakul A. reported his personal experience in King Chulalongkorn Memorial Hospital, during 1993-2002. He operated on 11 cases of presacral tumors (4 chordomas, 4 neurogenic tumor, 3 developmental cysts and 1 giant cell tumor). The noticeable point from this study is that all of the 4 chordoma patients had local recurrence. He suggested that presacral tumor should undergone more radical resection with adequate margin.

Between 2000-2005, we changed our policy to more radical surgery. We had operated 6 patients with large sacral tumor (5 chordoma, 1 giant cell tumor). Three patients, who had tumor extension to S1 level and tumor invasion through sacroiliac joint, were operated by the enbloc extended total sacrectomy, including resection of both sacroiliac joints. Another 3 patients who had limited tumor extension below S2 level, were operated by partial sacrectomy at S1 level.

All patients had two stage operations. In the abdominal stage, we mobilized left side colon and rectum and prepared for sigmoid colostomy and long Hartmann stump with preservation of superior rectal artery. We also controlled all pelvic vessels. Anterior osteotomy of pelvic bone and/or sacral bone was performed. The L5-dissectomy was done in total sacrectomy cases. In the second stage, the patients were repositioned in prone position, the tumor was removed after completion of posterior osteotomy. Additional L5-S1 laminectomy was done in total sacrectomy cases. The large sacral defect was closed by suturing of the Hartmann stump to the L5 body and to the pelvic side wall. Bilateral gluteus maximus flaps were used to cover the rectal stump. All patients have good recovery except one who had pressure sore of the skin flap which was eventually healed. None of the patients developed sacral hernia. So far, for short-term follow up, no local recurrence was detected in this group of patients.

## ANAL SPHINCTER INJURY – ACUTE AND DELAYED PRESENTATIONS

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Anal sphincter injury comprises either structural damage to the anal sphincter muscle complex or injury to its nerve supply ; the pudendal nerve which is the chief nerve supply to the striated muscle of the anal sphincter and the autonomic nerves supplying the internal anal sphincter. Common causes of anal sphincter injury are; obstetric trauma, accidental and iatrogenic trauma – internal anal sphincterotomy, anal stretch , haemorrhoidectomy, surgery for anal fistula, surgery for anal warts, trans-anal resection and extended low anterior resection (1) Less common causes of anal sphincter injury are rectal prolapse, anoreceptive intercourse and pelvic sepsis. Diabetic neuropathy is known to result in autonomic neuropathy of the internal anal sphincter (2).

Study of obstetric anal sphincter injury has, by far, resulted in our greatest understanding of the pathophysiology of anal sphincter damage. At the outset, it is essential to understand that anal continence, the chief function of the anal sphincters, is multi-factorial and will be preserved to a great extent despite initial injury to one or more components of the anal sphincters. Incontinence which presents in the acute situation will therefore, depend on the extent of the anal sphincter injury ; isolated sphincter injuries are less likely to produce symptoms compared with combined injury to one or more components of the anal sphincters (3). Isolated internal anal sphincter disruption is likely to result in incontinence to gas, faecal soiling, particularly at night time, and soiling after defaecation because of delayed recovery of resting anal tone. With isolated external sphincter injury, a person would be unable to defer defaecation if required and hence urgency to defaecate is usually a key feature. Most women after obstetric trauma have combined anal sphincter injuries. Furthermore, pudendal nerve injury after prolonged straining during childbirth has been shown to recover within two months in up to 60% of women resulting in improvement in continence (4). It is now standard practice to assess symptoms by continence scoring systems eg; Cleveland score ; 0 = perfect continence and 20 = gross incontinence to understand its impact on an individual's quality of life. Unless symptoms are severe and, in the presence of much of the native sphincter, it is customary to treat initial injuries by non-operative methods.

Because anal incontinence is a social taboo, most tend to present many months or years after initial injury when symptoms become unbearable. However, anal sphincter injuries may also remain occult and only manifest when a subsequent event further damages a compromised sphincter such as with subsequent traumatic deliveries, internal sphincterotomy or anal fistula surgery in those with an underlying occult defect. Delayed presentation of incontinence is seen in the fifth and sixth decades of life in women because of associated age related degeneration with occult anal sphincter injury.

Those with a rectovaginal fistula associated with anal sphincter injury may not experience anal incontinence until after fistula repair. By contrast, anal incontinence in men is less common.

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## ANAL STENOSIS

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Anal stenosis is an abnormal anatomical narrowing of the anal canal, and it is not commonly seen in the colorectal clinic. Usually, anal stenosis can be a late sequela of various anorectal surgical procedures. It has become rare as the use of circumferential hemorrhoidectomy has been abandoned. Other causes of anal stenosis including recurrent anal fissure, recurrent anal fistuloabscess with required of multiple anal surgical procedures, Crohn's disease, radiation injury, and Paget's or Bowen's disease that required excessive excision of perianal skin lesion.

Treatment of anal stenosis is depending on the level of anal canal and severity of stenosis. Mild stenosis can be treated conservatively using combine bulking of the stool with dilation in the clinic and/or at home using the finger or calibrated rubber dilator and topical anesthetic. Surgical treatment is reserved for complex stenosis, such as high anal strictures or severe stenosis. The procedures are lateral sphincterotomy, one of a number of advancement flaps (mucosal advancement flap, V-Y advancement flap, Y-V advancement flap, island flaps, and S-plasty).

## RECTOVAGINAL FISTULAS

Joe J Tjandra

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Most rectovaginal fistulas affect the distal rectum and the anal canal. Common causes are shown in Table 1.

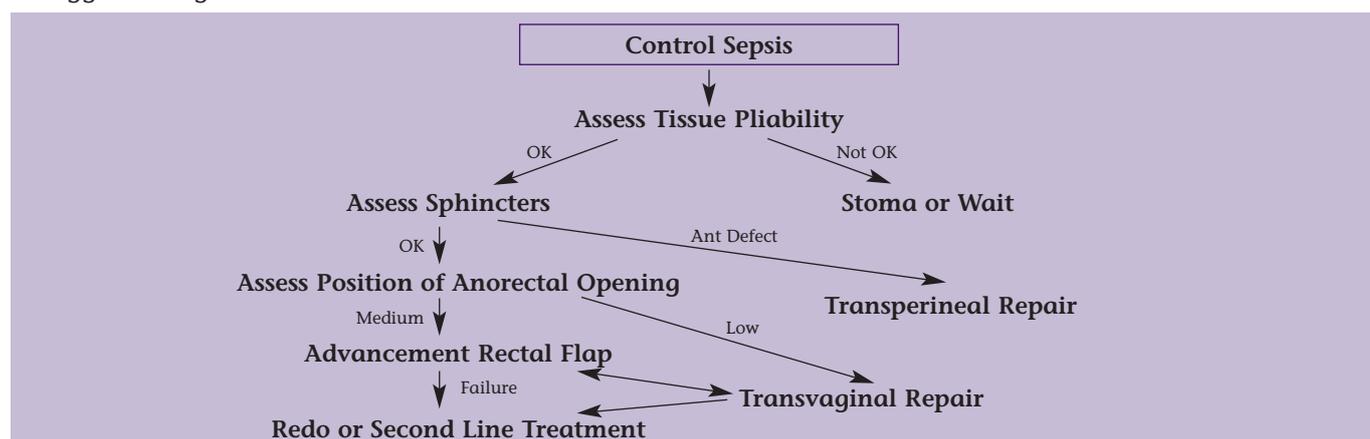
AETIOLOGY		
☞ Obstetric Injury	☞ Infection (Cryptoglandular, Bartholin's, TB)	☞ Trauma
☞ Crohn's Disease	☞ Neoplasm	☞ Congenital
☞ Radiation Injury		

The most important step would be to establish the diagnosis, based on symptoms and a careful rectal and vaginal examination. Often an examination under anaesthesia is necessary unless the fistula is very large.

Priorities in treatment include treating any acute sepsis or allow time for inflammation (such as post partum or post radiation therapy) to settle. Simple fistulotomy is rarely appropriate. Complex fistulas are usually result of repeated failed surgical treatment, or due to Crohn's disease or radiation therapy.

Surgical treatments include transanal approaches (advancement rectal flap; sleeve advancement flap), transvaginal repair or transperineal approaches (with or without additional bulbocavernosus flap or gracilis muscle). Rarely, a radical proctectomy with coloanal anastomosis is necessary. The role of fibrin glue in rectovaginal fistula is not yet defined but the fistula tract is probably too short for its use.

A suggested algorithm is shown below.



## LAPAROSCOPIC COLORECTAL SURGERY: IS IT SAFE?

**Joe J Tjandra**

*Epworth Colorectal Centre & Royal Melbourne Hospital, University of Melbourne, Australia*

Laparoscopic colorectal surgery is now well established. The techniques are established for benign diseases such as diverticular disease, rectal prolapse or inflammatory bowel disease. Its role in colon cancer is well defined by the position statement of the American Society of Colon and Rectal Surgeons; and its safety and efficacy is confirmed by two recent meta-analysis of published randomized trials.

Laparoscopic surgery for rectal cancer is technically more difficult, and there are limitations with existing endoscopic equipments. The technical limitations revolve around difficulty in mobilizing distal rectum around the levator floor and the limited angulation of endoscopic staplers in allowing a very distal staple-transection of the anorectal stump. Often a hybrid procedure is employed utilizing a small suprapubic incision to complete the laparoscopic-assisted procedure. A small suprapubic incision will greatly facilitate distal rectal and inter-sphincteric mobilization, and hence sphincter preservation; and render a safer and easier staple-transection of the anorectal stump with the Contour Curve Cutter (Ethicon Endo Surgery).

There are only limited randomized data on the efficacy and safety of laparoscopic resection for rectal cancer. Well-designed case control studies, however, have confirmed its safety and efficacy. However, laparoscopic resection for rectal cancer should be attempted only after there has been considerable experience with laparoscopic colorectal surgery.

Challenges in learning and adopting laparoscopic surgery will be discussed.

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## SURGICAL MANAGEMENT OF RECURRENT RECTAL CANCER

**Joe J Tjandra**

*Epworth Colorectal Centre & Royal Melbourne Hospital, University of Melbourne, Australia*

Approximately 20 % of patients develop pelvic recurrence after curative resection. Pelvic recurrence is best described based on the anatomic region (s) of the pelvis involved: Anterior (genitourinary), Posterior (sacrum), Axial (anastomotic, mesorectal or perineal) or Lateral. Accurate diagnosis and staging are important for optimal treatment. Of the various categories, lateral recurrences along the pelvic sidewall are the least likely to be resectable. These tumours often involve the bony pelvis or the sciatic nerve.

Approximately 40 % of local recurrences are confined to the pelvis and are amenable to potentially curative resection. Patients tend to fall within of the following four categories :

- A. Resectable isolated local recurrence: Cystoscopy with bilateral ureteric stent placement is recommended for all patients at surgery. At exploratory laparotomy (or laparoscopy), about 50 % are likely to be unresectable, due to extensive local or peritoneal disease.
- B. Unresectable isolated local recurrence: If the patient has not reached prior radiotherapy dose limit, further treatment with chemoradiotherapy should be considered. Other local palliative treatment such as stoma, bypass, stenting or fulguration could be considered until chemoradiotherapy produces an effect.
- C. Symptomatic local recurrence with distant metastases: Palliative treatment is the key.
- D. Asymptomatic local and distant recurrence: Occasionally synchronous or staged resection of two sites of isolated disease (eg. Pelvis and lung or liver) could be considered.

Surgery for recurrent rectal cancer is NEVER easy, and ALWAYS require a multi-disciplinary approach.

## **CLOSURE OF PERINEAL DEFECTS**

**Somasundaram Sathappan**

*Subang Jaya Medical Centre, Subang Jaya, Selangor, Malaysia*

Perineal defects arise secondary to trauma, infection or tumour ablation.

There are various methods available in the armamentarium of the reconstructive surgeon, and these include, the pudendal flap, inferiorly pedicled rectus flap, lotus flap and the gracilis flap. The various reconstructive options will be discussed.

## **NURSING CARE OF DIFFICULT STOMA: STOMA SITING IN THE OBESE, SKIN EXCORIATION AND STOMA RETRACTION**

**Mariam Haji Mohd Nasir**

*University Malaya Medical Centre, Kuala Lumpur, Malaysia*

Specially trained Enterostomal Therapist/E.T. nurses are devoted to help patients by offering preoperative counseling prior to ostomy surgery, caring for patients after surgery and providing education to patients about post-surgery needs and stomacare management.

Their roles in managing ostomies patients are more challenging especially dealing with the problems or difficult stomas. Finding the best spot on the abdomen for the surgeon to create the stoma (siting) as to ensure both comfort and a reliable seal with the ostomy pouch is a problem especially in obese patients.

The need to recommend the most appropriate pouching system is also crucial especially with problems stoma such as retraction which will cause skin excoriation if it is not managed properly. Skin excoriation has a great impact on psychological aspect of stoma patients.

The speaker will share in the conference her knowledge and experiences in managing difficult stoma especially siting in the obese patients and management of stoma retraction and skin excoriation.

## **NURSING ASPECT OF WOUND CARE: TYPES OF DRESSINGS FOR WOUND CARE**

**K Sunita Das**

*Sunway Medical Centre, Selangor, Malaysia*

Wound care is an effective pathway in the curative aspect of a patient's road to recovery. The importance of it is emphasized when longer hospitalisation is required either due to wound breakdown with local or systemic infection. Therefore, it is imperative for clinicians to be involved in the paradigm of wound care.

Acknowledging the current trends in wound care and with the involvement of technology, aids the clinician to initiate several functional wound care goals thru appropriate dressings.

The clinician has to not only cover, protect and hydrate the wound, but to also insulate, prevent infection, debride, absorb exudates whilst obliterating or filling dead spaces with the main goal of granulation or epithelization in mind (1).

The laborious efforts using traditional methods of using dry or wet gauze over wounds with cleansing agents such as hydrogen peroxide, Povidone or Sodium hypochlorite and disrupting the healing process thru frequent dressings does not benefit wound recovery and are not cost or work time savvy.

Cleasers such as the above have also shown to be toxic to human fibroblasts thus affecting the proliferation phase of wound healing (2).

Most importantly, this leaves the patient in an extremely stressful condition resulting from factors ranging from financial burdens to depression which affects him as well as the surrounding environment.

With emphasis onto knowledge of current wound care, “dressing confusion” can be avoided. Categorizing wound care and what it needs to heal effectively can put one on the fast track of advanced wound care. The clinician can then decide what and when to use with how long the dressing can be left on.

Wound care categories range from cleasers, hydrocolloids, hydrofibers, silver impregnated dressing to mechanical devices. One might even chance upon “maggots” dressings for optimum healing but this is more seen for management of limb ulcers.

From the plethora of wound care products, a sound knowledge is required to create a favourable response for patients and clinicians, where it aids in the battle of poor wound healing or infected wounds. The speaker hopes to achieve this thru her presentation.

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#### SYMPOSIUM 6

## PERIOPERATIVE CARE OF PATIENTS UNDERGOING COLORECTAL SURGERY

**Meheshinder Singh**

*Pantai Cheras Medical Centre, Kuala Lumpur, Malaysia*

Perioperative care is the medical care provided in preparing a patient for surgery and the process of recovery thereafter. In many cases the quality of perioperative care is equally important to the achievement of a good outcome as the operation itself especially so in patients who have a multitude of co morbitities.

The preoperative period begins once it is decided that a patient needs surgery. This may extend from a few moments to several days (if multiple or complex comorbid factors need addressing). Care starts with a preoperative risk assessment.

#### THIS IS NECESSARY AS IT PERMITS:

1. implementation of perioperative strategies to reduce chances of morbidity and mortality
2. discussion with patient and family members regarding possible complications
3. a proper informed consent

Once strategies have been outlined, patients undergo some investigations Patients with concurrent medical problems or those at risk of cardio or pulmonary complications would require further tests and assessment by the relevant clinicians.

Prior to colorectal surgery patients require bowel preparation. Eventhough its role has been a matter of debate, proponents for it would justify its use. Bowel preparation involves dietary restriction, mechanical bowel preparation and antibiotics.

Perioperative antibiotics are useful in reducing the rates of postoperative infections. To be effective, these are best administered at the time of induction or “on call to OR”.

Patients undergoing colorectal surgery are often at increased risk for venous thromboembolic complications. Several methods of prophylaxis include low dose unfractionated heparin(LDUH), low molecular weight heparin (LMWH), intermittent pneumatic compression devices and graduated compression stockings.

Postoperatively, good pain control, early mobilization and early feeding should be encouraged. Currently, with rising costs of health care, use of a common clinical pathway in managing colorectal surgical patients should be considered. Apart from cost containment, these pathways have been proven in ensuring consistency in management, minimizing unwanted delays and reducing complications.

## **SURGICAL MANAGEMENT OF PERIANAL CROHN'S DISEASE**

**Joe J Tjandra**

*Epworth Colorectal Centre & Royal Melbourne Hospital, University of Melbourne, Australia*

Perianal Crohn's disease may be present prior to, concomitant with or after the diagnosis of intestinal Crohn's disease. It is most commonly associated with large bowel disease (50 %), ileocolic (35 %) and small bowel disease (15 %).

Treatment depends on the type and extent of perianal Crohn's disease. Conservatism is the key. Treatment of intestinal disease will often ameliorate anal disease.

### **THE FOLLOWING SITUATIONS ARE COMMON:**

**Perianal abscess:** Incision and drainage – keep simple, and often require draining seton.

**Fistula-in-ano:** Asymptomatic fistulas do not require any treatment. Optimal medical therapy is effective in many situations. Surgical therapy should be tailored towards relief of sepsis and preservation of sphincters. Usually treatment is with long-term silastic draining setons. Occasionally where there is limited rectal disease, and there is a single internal rectal opening, an advancement rectal flap can be considered.

**Haemorrhoids and skin tags:** Most patients can be managed nonoperatively with management of diarrhea and topical ointment. The occasional patient with significant haemorrhoidal symptoms in the absence of active Crohn's proctitis could benefit from limited excision of anal skin tag or haemorrhoidectomy.

**Anal fissure:** Crohn's related fissures are best managed non-operatively with topical ointment, and medical treatment of Crohn's disease. Any associated anal sepsis should be drained. Occasionally, patients with Crohn's disease might develop standard anal fissure with painful midline fissures associated with increased resting anal canal pressures. If conservative management has failed in this latter group, especially in the absence of active Crohn's proctitis, a sphincterotomy can be performed.

**Epidermoid Anal Carcinoma**

Long standing perianal Crohn's disease predisposes to development of epidermoid anal carcinoma. Usually a proctectomy is necessary. Unfortunately the diagnosis is often delayed.

## **FOLLOW UP AFTER COLORECTAL CANCER SURGERY: COLORECTAL CANCER SURVEILLANCE**

**Mohamad Ismail Ali**

*Johor Specialist Hospital, Johor, Malaysia*

This surveillance strategy applies to adult patients with curatively resected colorectal cancer. Patients should be alerted to the future risks of disease recurrence, which is related to tumour stage, and to the development of a second colorectal cancer. There is significant survival benefit noted with more intensive follow-up which is due to the early diagnosis and resection of limited recurrent disease in the liver, lungs, or local sites. It seems that this diagnosis of resectable recurrences is due to early assessment of symptoms and the use of screening tests (blood CEA, chest x-ray, liver imaging, or colonoscopy).

There is insufficient evidence on which to base a recommendation for specific screening tests and frequency of visits. In light these, and based on the rate of recurrent disease and second neoplasms and on available facilities in Malaysia, it is advised:

In patients who are at high risk of relapse (stages IIb and III disease), prompt assessment should be done if symptoms of potential disease relapse is present. For asymptomatic patients, clinical assessment at least every six months for two years, and then annually for an additional three years is recommended. During those visits patients may have blood CEA, chest x-rays, and liver ultrasound or CT. When recurrences of disease are detected, patients should be assessed by a multi-disciplinary oncology team including surgical, radiation, and medical oncologists to determine the best treatment options.

In patients who have co-morbidities which may interfere with prescribed tests or potential treatment for recurrence, or who are unwilling to undergo prescribed tests or potential treatment for recurrence, clinical assessments yearly or for suggestive symptoms of relapse is suggested.

**SYMPOSIUM 8**

**MANAGEMENT OF HEREDITARY COLORECTAL CANCERS:  
FAP AND HNPCC**

**Ooi Boon Swee**

*Department of Colorectal Surgery, Singapore General Hospital, Singapore*

FAP and HNPCC are two most recognised and studied hereditary colorectal cancer syndrome. Management of a patient with FAP should include thorough counseling about the nature of the syndrome, its natural history, its extracolonic manifestations and the need for surveillance. Prophylactic proctocolectomy with ileopouch anal anastomosis (IPAA) should be the treatment of choice for patients with FAP while total colectomy with ileorectal anastomosis (IRA) with close surveillance may be considered in selected cases. The timing of surgery depend on the severity of the phenotype, age and circumstances of the patient. Lifetime surveillance of the rectum (after IRA), pouch (after IPAA) and duodenum for adenomas are important part of the management. HNPCC has a heterogeneous spectrum of phenotype. Some kindreds are predisposed to cancer of the endometrium, ovaries, urinary tract and stomach. Screening for colorectal cancer in families with HNPCC has been shown to have notable benefit. Prophylactic total colectomy should be offered to patient with HNPCC as the risk of metachronous cancer after segmental colectomy is as high as 45%. Patients who have HNPCC with rectal cancer should be offered proctocolectomy and IPAA and female patients with HNPCC and uterine cancer in the family may be offered prophylactic hysterectomy when their family is completed.

**SYMPOSIUM 8**

**ANAL TUMOURS: CARCINOMA, MELANOMA AND PAGET'S DISEASE**

**Kemal I Deen**

*Department of Surgery, Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka*

Malignant tumours of the anal area occur about 20 times less frequent than colonic malignancy. Anal canal tumours are distinct from those of the anal margin. Two thirds of patients are between 45 and 65 years old and most cancers of the anal canal are seen in women whilst the reverse is true of anal margin tumours. Some 80% of anal canal tumours are squamous in origin which are either transitional, basaloid or cloacogenic in origin, based on histology. 10% Of anal canal tumours are adenocarcinoma and the remainder, malignant melanoma. Neoplasms of the anal margin and perianal skin include squamous cell carcinoma, Pagets' disease, Bowen's disease and basal cell carcinoma. Any suspicious lesion in and around the anus is best biopsied for histological evaluation. There is a strong association between squamous anal cancer and human papilloma virus infection.

Anal cancer spreads by direct invasion of the anal sphincters and is predominantly a locoregional disease. Nodes which may be involved by the spread of anal cancers are mesorectal, iliac and inguinal. Staging is by the UICC system of TNM and is T1 <2cm, T2; 2-5cm, T3; >5cm and T4; adjacent organ involvement. Node staging is from N1to N3 whilst M denotes metastasis.

Chemoradiation is the mainstay of treatment in anal squamous cancer. Surgical excision which may follow primary chemoradiation may be by wide local excision for T1 lesions. Salvage abdomino-perineal excision may be undertaken in about 20% of T2/T3 lesions and for all T4 lesions. Prophylactic irradiation of the inguinal area is an important step in prevention of inguinal nodal recurrence which may then require block dissection with considerable morbidity.

For malignant melanoma, the anal canal is the most common site of occurrence. Because of the poor survival associated with malignant melanoma of the anal area, abdomino-perineal excision is not generally undertaken early in the course of the disease. The tumour is radio-resistant and chemotherapy is of little proven benefit. Immunotherapy, i.e. BCG vaccination has been thought to play a role in stemming progress of the disease.

Paget's disease is characterized histologically by the presence of large, round, clear staining cells with large nuclei. Most patients complain of ulceration, discharge and pruritus ani, with bleeding and anal pain being occasional symptoms. Carcinoma, ex; cutaneous carcinoma, may be found in a high proportion of patients in adjacent areas. Usually, wide local excision of Paget's lesion with clear margins is sufficient initial therapy with regular follow up. Consideration may also be given to multi-modal therapy.

## SYMPOSIUM 8

### MANAGEMENT OF COLORECTAL CARCINOIDS

**William T Chen**

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Carcinoid tumors are the most common gastrointestinal neuroendocrine tumors. Carcinoid tumors occur in less than 0.001% of the general population.

In colon, carcinoid tumor usually detected in patients who are in their 70s, and features of carcinoid syndrome are often absent. The majority of the patients suffered from abdominal pain, anorexia, or weight loss. Colonic carcinoid tumor is predominately located in the right side colon, and because of the high capacitance of the right colon tumors are often greater than 5 centimeter at the time of diagnosis. In rectum, vast majority of the carcinoid tumors were diagnosed incidentally by rectal examination or endoscopy, and is commonly seen in patient in their 60s. Rectal bleeding and rectal pain are often the complaints of the patient, but is uncommon.

Treatment of the colorectal carcinoid tumor depends upon the size of the tumor. Carcinoid tumors that are less than one centimeter may be treated by endoscopic resection or segmental resection using laparoscopy for colon, and local excision for rectal carcinoid tumor. For tumors larger than one centimeter and smaller than two centimeters in size has been controversial. Tumors that are larger than two centimeters are frequently treated with radical surgery like the colorectal carcinoma.

The outcome of the tumor is depending on the sized of the tumor as well. Complete resection of the lesions resulted in resolution of the disease. Carcinoid tumors that are greater than two centimeter in size have a high likelihood of metastasis, and five-year survival is approximately 75% for all rectal carcinoid tumors.

## **MANAGEMENT OF LARGE SACRAL DEFECT FOLLOWING SACRECTOMY IN KING CHULALONGKORN MEMORIAL HOSPITAL (KCMH)**

**Sahakitrungruang C\*, Chantra K\*\*, Patana-Arun J\*, Rojanasakul A\***

*Department of Surgery, Chulalongkorn University, Bangkok, Thailand*

### **OBJECTIVE**

To demonstrate the management of large sacral defect following sacrectomy operation.

### **MATERIALS AND METHODS**

We retrospectively reviewed a case series of large sacral defect following sacrectomy operation KCMH from 2000 to 2005. The underlying disease was reviewed. Plan of the management in each stage was extensively discussed before the operation.

### **RESULTS**

There were 6 patients who had primary sacral tumor (5 chordomas, 1 giant cell tumor). Enbloc extended total sacrectomy, including resection of both sacroiliac joints, were done to 3 patients who had tumor extension to S<sub>1</sub> level and tumor invasion through sacroiliac joint. Partial sacrectomy at S<sub>1</sub> level was done in 3 patients who had limited tumor extension below S<sub>2</sub> level.

All patients had two stage operations. In the abdominal stage, we controlled all pelvic vessels, anterior osteotomy, constructed a sigmoid colostomy and long Hartmann stump with preservation of superior rectal artery. The L<sub>5</sub>-dissectomy was done in total sacrectomy. In the second stage, the patients were repositioned in prone and the tumors were removed posteriorly after completion of posterior osteotomy. L<sub>5</sub>-S<sub>1</sub> laminectomy was done in total sacrectomy. The large sacral defect was closed by suturing of the Hartmann stump to the L<sub>5</sub> body and to the pelvic side wall. Bilateral gluteus maximus flaps were created to cover the rectal stump. All patients had good recovery except one who had pressure sore of the skin flap which was eventually healed. None of the patients developed sacral hernia.

### **CONCLUSION**

Hartmann stump is a well-vascularized flap that can be used to cover large sacral defect, and bilateral gluteus maximus flaps are also a reliable vascularized flap which can be used in this a particular situation.

## **AN INTERNAL AUDIT OF COLONOSCOPY PERFORMED AT HOSPITAL TENGGU AMPUAN AFZAN, KUANTAN**

**T Haritharan<sup>1</sup>, H Singh<sup>1</sup>, Azmi M N<sup>2</sup>, Nasser M A<sup>2</sup>**

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*<sup>2</sup>Kulliyah of Medicine, International Islamic University of Malaysia (IIUM), Kuantan, Pahang, Malaysia*

### **INTRODUCTION**

Colonoscopy is commonly performed at our center. All patients with lower gastrointestinal symptoms are offered the procedure. Until now our practice has yet to be validated by an audit. Therefore we conducted this prospective audit and hereby present our findings.

### **METHODS**

The audit was a prospective study conducted between November 2004 and June 2005. A study specific form was filled out by the colonoscopist immediately following the procedure.

### **RESULTS**

465 colonoscopies were attempted in the study period. 329 (70.7%) were completed. If patients with poor bowel preparation were excluded an adjusted completion rate of 90.3% was achieved. 80.6% of patients scoped were 40 years old and above. 55% were male. Racial distribution followed that of the population under study. 54% of procedures were carried out by consultants and 41% by clinical specialists. Average time to complete each procedure was 28 minutes. Most common reasons for incomplete procedure were poor bowel preparation (41%), technical difficulties (20%) and poor compliance of patient (17%). 47% of completed colonoscopies were normal. Per rectal bleeding was the commonest indication. We detected 34 cases of malignancies in the study period.

### **CONCLUSION**

The audit findings prove that our adjusted completion rates are comparable with similar rates internationally. Poor bowel preparation remains a difficult problem in our population of study.

## **LAPAROSCOPIC COLORECTAL SURGERY: AN EAST COAST EXPERIENCE**

**Khadri A A<sup>1</sup>, Azmi M N<sup>1</sup>, Junaini K<sup>1</sup>, Zailani H<sup>1</sup>, Shahrin A S<sup>1</sup>, Kannan K<sup>2</sup>**

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### **AIMS**

To establish the learning curve, feasibility and outcome of laparoscopic colorectal surgery (LCS).

### **METHODS**

A retrospective review of patients' data who underwent elective LCS under single consultant. We demonstrated the safe adoption of LCS for colorectal disease. A standardized audit performed included full demographic and surgical details as well as data on duration of surgery, morbidity, length of hospital stay (LOS), readmission and 30-days mortality.

### **RESULTS**

A total number of six patients underwent LCS. The age ranges were 56 – 80 years, ASA Grades II-III. Half of the patients were female. The surgical procedures performed were: anterior resections ( $n = 3$ ), Laparoscopic

assisted abdominoperineal resection ( $n = 1$ ), sigmoid colectomy ( $n = 1$ ) for sigmoid volvulus and a right hemicolectomy ( $n = 1$ ). Median operative time was 314.0 (ranges, 190 – 420) minutes. Median hospital stay was 5.33 (range, 4 to 10) days. There was one conversion in laparoscopic anterior resection due to technical difficulties. There was no anastomotic leak, or port site complications. There were no readmissions or postoperative deaths. All oncological resection had clear resection margins with adequate lymphadenectomies.

#### CONCLUSIONS

LCS can be safely performed by adequately trained surgeon and supportive staffs without compromising surgical principles.

#### POSTER 3

### EARLY EXPERIENCE IN THE USE OF FIBRIN GLUE FOR TREATMENT OF GASTROINTESTINAL FISTULA. A PROSPECTIVE TRIAL

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#### BACKGROUND

Since fibrin glue was introduced in 1992 for the treatment of complex anal fistula and rectovaginal fistula, only a limited number of studies involving small number of patients have been published. Early results were encouraging with high rates of fistula closure but long term efficacy remain uncertain.

#### AIMS

The article illustrates our early experience in the management of anorectal fistula with fibrin glue. The report also analyzes the efficacy of this new method in terms of healing rate and possible morbidity associated with its use.

#### METHOD

Nine patients treated with fibrin glue were followed up. All patients in our study were seen by the same surgeons preoperatively as well as during the follow up. The patients who were admitted with infected fistula had a seton inserted and reassessed under anaesthesia three to four weeks later. Only those with complex fistula and fistula with sphincter involvement were selected for fibrin glue instillation. Fistula tracks were excised until the sphincters were exposed and the remaining track instilled with fibrin glue. Post operatively, the patients were seen at the surgical clinic in 2 weeks to assess the wound and associated morbidity.

#### RESULT

In our study, two patients were diagnosed to have complex fistula-in-ano, five had trans-sphincteric, one with anastomotic sinus and another presented with rectovaginal fistula. Period of follow up ranged from 1 month to 13 months with a median of 8.4 months. Two patients had to undergo repeat fibrin glue instillation due to recurrence. One with an anastomotic sinus and the other one with a complex fistula. Eight of our patients had fistula closure during the follow up with no evidence of recurrence and none of them had faecal incontinence. However a patient with anastomotic sinus had recurrence.

#### CONCLUSION

From our study, we conclude that fistulectomy followed by the fibrin glue instillation can give a better outcome in term of fistula closure and maintain normal sphincter control.