

SOUVENIR PROGRAMME & ABSTRACT BOOK

# 5<sup>th</sup> Malaysian Colorectal CONFERENCE

**“Exploring the New – Revisiting the Old”**

**1 – 3 March 2007**

**Sunway Resort Hotel & Spa  
Petaling Jaya, Malaysia**

**Organised by**



**MALAYSIAN SOCIETY OF COLORECTAL SURGEONS**



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## ORGANISING COMMITTEE

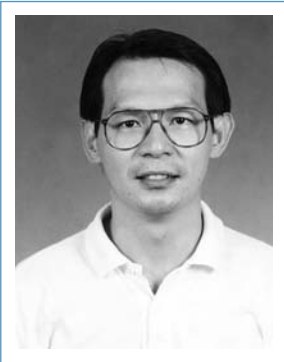
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## MESSAGE



Hello and Welcome to the 5<sup>th</sup> Malaysian Colorectal Conference 2007. To our overseas attendees, we are honored you have chosen to invest your time with us. Do take some time to tour and celebrate VISIT MALAYSIA YEAR 2007 with us. To all delegates, we are confident you will find the programme enjoyable and hope you can find it useful and applicable to your practice. We are indeed honored to have with us an international faculty of teachers who are peerless in colorectal surgery.

In 2003, a colorectal surgery interest group organized the First Colorectal Weekend in Melaka. This was followed by the Second Colorectal Weekend in Penang in 2004. The Third Colorectal Weekend was held at this very venue, Sunway Lagoon Resort, Petaling Jaya in 2005. The Malaysian Society of Colorectal Surgeons (MSCRS) was formally registered shortly after that meeting. Last year, 2006, the 4<sup>th</sup> Malaysian Colorectal Conference was held, also at this very venue. At that conference, the MSCRS was officially launched by Y B Datuk M Kayveas, Deputy Minister at the Prime Minister's Office. Now we have arrived at the 5<sup>th</sup> Malaysian Colorectal Conference 2007: ***EXPLORING THE NEW – REVISITING THE OLD.***

Currently, we have established international links with other colorectal societies. MSCRS is a member of the Asean Society of Colorectal Surgeons. Close links have already been forged with the Philippines, Singapore and Thailand Colorectal Societies. We have made official contacts with the American Society of Colon and Rectal Surgeons and Asian Federation of Coloproctology. We are currently pursuing closer relations with the Australian Society, Indian Society, Sri Lankan Society and the Vietnamese and Indonesian surgeons. We welcome any and every opportunity to network with other national colorectal societies worldwide.

At home, we endeavour to network closely with the national speciality groups, like the College of Surgeons, the Malaysian Oncological Society, the O & G Society of Malaysia and many others for mutual benefit. We are keen to partner with the public and the university hospitals in providing and sharing clinical expertise. Whenever the opportunity arises, we make it our priority to participate in teaching, training, and research in colorectal surgery.

We hope all of you will take advantage of whatever the MSCRS is striving to achieve for the benefit of your patients. Please take time to visit the booths, meet up with old friends, make new ones and grab the opportunity to discuss your problems with the teaching faculty. Having done all that, we hope you will make plans to attend the 6<sup>th</sup> Malaysian Colorectal Conference in 2008. Visit us at our website: [colorectalmy.org](http://colorectalmy.org)

Have a whale of a time. You deserve it.

Yours truly,



**DR SAMUEL TAY KWAN SINN**

*President, Malaysian Society of Colorectal Surgeons &  
Chairman, Organising Committee, 5<sup>th</sup> Malaysian Colorectal Conference*

## PROGRAMME SUMMARY

DATE TIME	1 MARCH 2007 THURSDAY	2 MARCH 2007 FRIDAY	3 MARCH 2007 SATURDAY	
0800 – 0900	<b>PRE-CONFERENCE WORKSHOP</b> <ul style="list-style-type: none"> <li>• Laparoscopic Colectomy</li> <li>• Anorectal Surgery</li> <li>• Endorectal Ultrasound</li> </ul>	<b>SYMPOSIUM 1</b> <i>Rectal Cancer</i>	<b>SYMPOSIUM FOR ALLIED HEALTH PROFESSIONALS</b>	<b>SYMPOSIUM 4</b> <i>Cancer</i>
0900 – 1000		<b>PLENARY LECTURE 1</b>		<b>PLENARY LECTURE 2</b>
1000 – 1100		<b>COFFEE</b>		<b>COFFEE</b>
1100 – 1200		<b>SYMPOSIUM 2</b> <i>Clinical Dilemma</i>		<b>SYMPOSIUM 5</b> <i>Colorectal Pot-Pouri</i>
1200 – 1300		<b>LUNCH SATELLITE SYMPOSIUM</b> <i>Roche Malaysia</i>		<b>LUNCH SATELLITE SYMPOSIUM</b> <i>Johnson &amp; Johnson (Ethicon Endo-Surgery)</i>
1300 – 1400		<b>FRIDAY PRAYERS</b>	<b>VIDEO SESSION 2</b> <i>How I Do It</i>	
1400 – 1500		<b>SYMPOSIUM 3</b> <i>Anorectal Functional Disorders</i>	<b>COLORECTAL TRAINING &amp; ACCREDITATION</b>	
1500 – 1600		<b>REGISTRATION</b>	<b>TEA</b>	<b>TEA SYMPOSIUM</b> <i>Seprafilm</i>
1600 – 1700			<b>VIDEO SESSION 1</b> <i>How I Do It</i>	<b>TEA</b>
1700 – 1800			<b>AGM OF MSCRS</b>	<b>CASE DISCUSSIONS</b>
1800 – 1900				
1900 – 2000				
2000 – 2200		<b>ANNUAL DINNER</b>		

## PRE-CONFERENCE WORKSHOP

Venue: Putrajaya Hospital, Putrajaya

Invited Surgeons: Professor Stanley M Goldberg (USA)

Dr Goh Hak Su (Singapore)

Dr Charles Tsang (Singapore)

### 1 MARCH 2007, THURSDAY

- 0800 – 0830 REGISTRATION
- 0830 – 0900 **Welcome Address**
- 0900 – 0930 Lecture by *Dr Goh Hak Su*
- 0930 – 0945 **COFFEE**
- 0945 – 1230 **LIVE SURGERY**
- Laparoscopic Colectomy
  - Anorectal Surgery
  - Endorectal Ultrasound
- 1230 – 1330 **LUNCH**
- 1330 – 1600 Case Discussion and Video Session

## DAILY PROGRAMME

### 2 MARCH 2007, FRIDAY

- 0800 – 0915 **SYMPOSIUM 1 • Rectal Cancer** *Grand Bahamas*  
*Chairmen: Dato' Dr R Ragupathy Naidu / Prof Yunus Gul*
- Total Pelvic Exenteration with Distal Sacrectomy for Fixed Recurrent Rectal Cancer [pg 11]  
*Prof Yoshihiro Moriya (Japan)*
  - Post-operative Radiotherapy for Rectal Cancer – A Desperate Measure? [pg 11]  
*Assoc Prof Fuad Ismail (Malaysia)*
  - Total Mesorectal Excision – The Perfect Specimen and Report [pg 12]  
*Dr R Pathmanathan (Malaysia)*
  - Q & A
- 0915 – 1000 **PLENARY LECTURE 1** *Grand Bahamas*  
*Chairman: Dr Samuel Tay*
- Fistula-in-Ano [pg 12-13]  
*Prof Stanley M Goldberg (USA)*
- 1000 – 1030 **COFFEE**



## DAILY PROGRAMME

**2 MARCH 2007, FRIDAY** *(continued)*

- 1030 – 1200     **SYMPOSIUM 2 • *Clinical Dilemma*** *Grand Bahamas*  
*Chairmen: Dr Andrew Gunn / Prof Peter Lee*
- Anastomotic Leaks – Implications and Salvage [pg 14-15]  
*Prof Joe Tjandra (Australia)*
  - Solitary Rectal Ulcer Syndrome – Is There Hope?  
*Prof Joe Tjandra (Australia)*
  - Surgery for Colorectal Liver Metastases – Indications and Limitations  
*Dato' Dr Tan Kah Chah (Singapore)*
  - Q & A
- 1200 – 1430     **LUNCH SATELLITE SYMPOSIUM** *Grand Bahamas*  
*Roche Malaysia*  
*Chairman: Dr Akhtar Qureshi*
- Avastin in Colorectal Cancer  
*Dr Robert Lim (Singapore)*
  - Xeloda: The Xtra Convenience for Rural Medicine  
*Dr Jayendran Dharmaratnam (Malaysia)*
- FRIDAY PRAYERS**
- 1430 – 1530     **SYMPOSIUM 3 • *Anorectal Functional Disorders*** *Grand Bahamas*  
*Chairmen: Dr Sukumar Nadesan / Dr Manohar Padmanathan*
- The Evaluation and Treatment of Pelvic Floor Disorders [pg 16-19]  
*Prof Joe Tjandra (Australia)*
  - Anterior Resection Syndrome [pg 19]  
*Dr Goh Hak Su (Singapore)*
  - Selecting the Proper Operation for Rectal Prolapse [pg 20-23]  
*Prof Stanley M Goldberg (USA)*
  - Q & A
- 1530 – 1600     **TEA**
- 1600 – 1700     **VIDEO SESSION 1 • *How I Do It*** *Grand Bahamas*  
*Moderators: Dr Lu Ping Yan / Dr Stephen Jacob*
- Laparoscopic Colectomy  
*Prof Yunus Gul (Malaysia)*
  - The Prone Jack-Knife Position for Carcinoma of the Rectum  
*Prof Stanley M Goldberg (USA)*
  - Sacral Nerve Stimulation  
*Prof Joe Tjandra (Australia)*
- 1700 – 1830     **AGM OF MSCRS** *Carribean*
- 1930 – 2230     **ANNUAL DINNER** *Grand Bahamas*



## DAILY PROGRAMME

3 MARCH 2007, SATURDAY

0845 – 1300	<b>SYMPOSIUM FOR ALLIED HEALTH PROFESSIONALS</b> <i>Chairmen: Ms Ravathy Ramamurthy / Ms Ng Yeng Lai / Puan Mariam Mhd Nasir</i>	<i>Caribbean</i>
0845	The Importance of Preoperative Stoma Site Marking <i>Ms Paat Sui Lin</i>	
0915	Nurses Who Care for the Psychosocial Needs After Ostomy Surgery <i>Ms Tai Seow Beng</i>	
1000	Q & A	
1030	<b>COFFEE / TEA</b>	
1100	<b>Hands-on Workshop on Stoma Care</b>	
0800 – 0930	<b>SYMPOSIUM 4 • Cancer</b> <i>Chairmen: Dr Ong Kee Thiam / Assoc Prof Azmi Md Nor</i> <ul style="list-style-type: none"><li>• Genetics of Colorectal Cancer. Clinical Applications [pg 23] <i>Dr Goh Hak Su (Singapore)</i></li><li>• Multi-Modality Treatment of Synchronous Liver Metastases from Colorectal Cancer (CRC) [pg 24] <i>Prof Basri J J Abdullah (Malaysia)</i></li><li>• Role of PET-CT in Colorectal Cancer [pg 25] <i>Dato' Dr Mohd Ali Abdul Khader (Malaysia)</i></li><li>• Follow Up After Curative Resection of Colorectal Cancer – A Meta-Analysis [pg 25] <i>Prof Joe Tjandra (Australia)</i></li><li>• Q &amp; A</li></ul>	<i>Grand Bahamas</i>
0930 – 1015	<b>PLENARY LECTURE 2</b> <i>Chairman: Dr Foo Chang Lim</i> <ul style="list-style-type: none"><li>• Current Status of Nerve Sparing Surgery for Rectal Cancer [pg 26] <i>Prof Yoshihiro Moriya (Japan)</i></li></ul>	<i>Grand Bahamas</i>
1015 – 1045	<b>COFFEE</b>	
1045 – 1200	<b>SYMPOSIUM 5 • Colorectal Pot-Pouri</b> <i>Chairmen: Dr Ismail Sagap / Dr Retna Rasa</i> <ul style="list-style-type: none"><li>• Laparoscopic Colorectal Surgery – Local Experience <i>Prof Yunus Gul (Malaysia)</i></li><li>• Anaesthesia in Colorectal Surgery <i>Dr Alan Wong (Malaysia)</i></li><li>• Radiation Proctitis [pg 27] <i>Dr Wan Khamizar (Malaysia)</i></li><li>• Management of Lower Gastrointestinal Bleeding [pg 27] <i>Dr Mohd Akhtar Qureshi (Malaysia)</i></li><li>• Q &amp; A</li></ul>	<i>Grand Bahamas</i>



## DAILY PROGRAMME

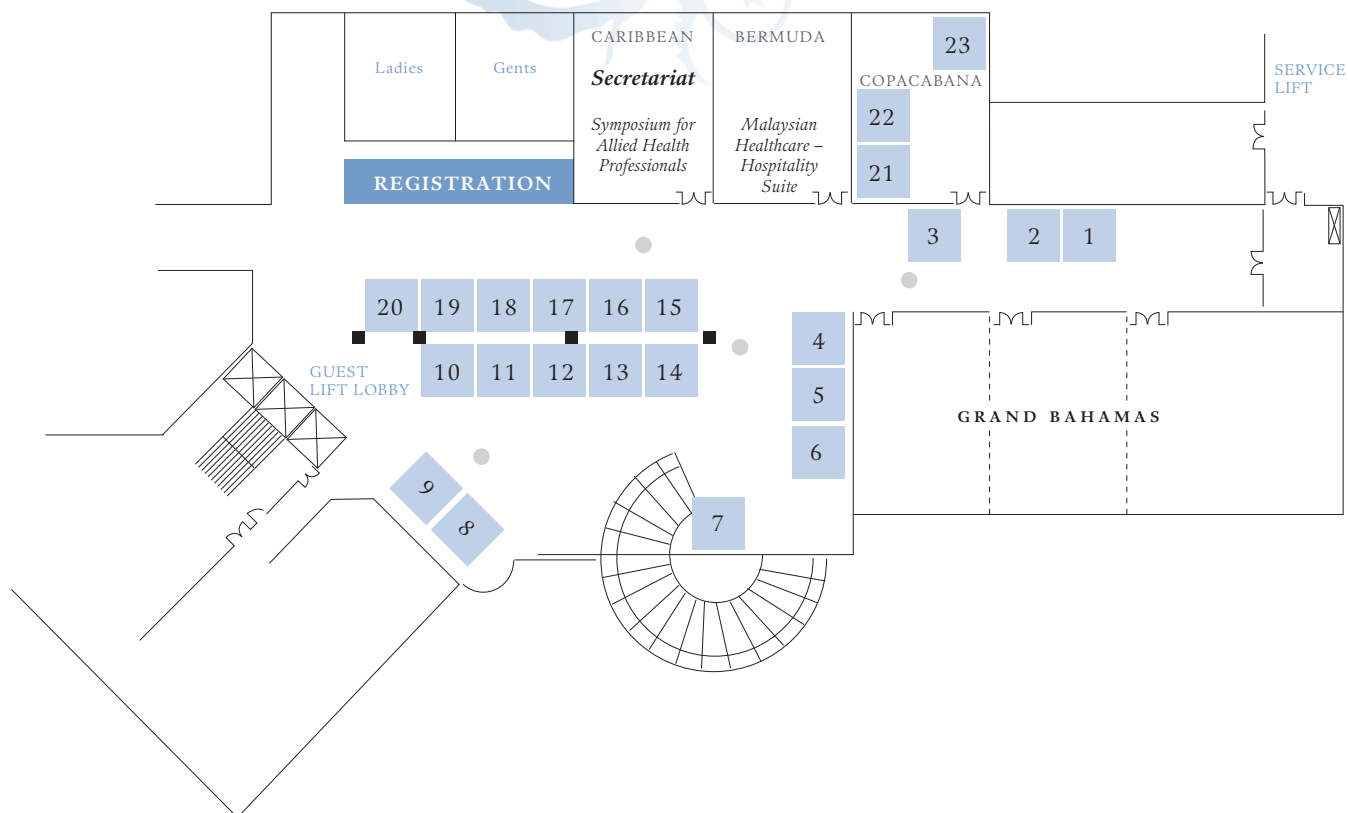
**3 MARCH 2007, SATURDAY** *(continued)*

- 1200 – 1330     **LUNCH SATELLITE SYMPOSIUM** *Grand Bahamas*  
*[Johnson & Johnson (Ethicon Endo-Surgery)]*  
*Chairman: Dr Samuel Tay*
- Stapled Hemorrhoidectomy Revisited  
*Dr Goh Hak Su (Singapore)*
- 1330 – 1430     **VIDEO SESSION 2 • How I Do It** *Grand Bahamas*  
*Moderators: Dr Gerald Henry / Dr Mohd Ismail Ali*
- Abdominal and Perineal Operation for Rectal Prolapse  
*Prof Stanley M Goldberg (USA)*
  - Hand assisted Laparoscopic Anterior Resection  
*Dr Goh Hak Su (Singapore)*
  - Therapeutic Colonoscopy  
*Dr Ryan Ponnudurai (Malaysia)*
  - Sphincteroplasty for Incontinence  
*Prof Stanley M Goldberg (USA)*
  - Panel Discussion / Q & A
- 1430 – 1530     **COLORECTAL TRAINING & ACCREDITATION** *Grand Bahamas*  
*Chairmen: Prof Dato' P Kandasami / Dato' Dr Hasim Mohamad*
- Training of an American Colon and Rectal Surgeon [pg 28]  
*Prof Stanley M Goldberg (USA)*
  - What's Happening Down Under? [pg 29]  
*Prof Joe Tjandra (Australia)*
  - Malaysian Concept of Colorectal Training – An Ideal Pathway  
*Dr Samuel Tay (Malaysia)*
  - Panel Discussion / Q & A
- 1530 – 1615     **TEA SYMPOSIUM [Seprafilm]** *Grand Bahamas*  
*Chairman: Prof Yunus Gul*
- Barriers to a Solution  
*Dr Samuel Tay (Malaysia)*
- 1615 – 1645     **TEA**
- 1645 – 1800     **CASE DISCUSSIONS** *Grand Bahamas*  
*Panels: Prof Joe Tjandra / Dr Samuel Tay /*  
*Prof Stanley M Goldberg / Prof Yoshihiro Moriya /*  
*Dr Goh Hak Su*



# FUNCTION ROOMS & TRADE EXHIBITION

## [LEVEL 12]



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1	United Italian Trading (M) Sdn Bhd
2	Sanofi Aventis/Aventis Farma SA
3	Tyco Healthcare Medical Supplies Sdn Bhd
4 & 5	Johnson & Johnson (Ethicon Endo-Surgery)
6	Convatec, Bristol-Myers Squibbs (M) Sdn Bhd
7	Ikon Technology Sdn Bhd
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13	Genyzme Malaysia Sdn Bhd
14	BH Enterprise Sdn Bhd
15 & 16	Roche (M) Sdn Bhd
17	Avro Medical Sdn Bhd
18	KS Tekno-Med Sdn Bhd
19	Pfizer (Malaysia) Sdn Bhd
20	Endodynamics (M) Sdn Bhd
22	Laptech Medical Sdn Bhd
23	United Malaysian Medical Industries Sdn Bhd

## **ACKNOWLEDGEMENTS**

*The Organising Committee of the 5<sup>th</sup> Malaysian Colorectal Conference wishes to thank the following for their support and contribution:*

**Ministry of Health Malaysia**

**Hospital Putrajaya**

### **MAJOR SPONSORS**

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## **TOTAL PELVIC EXENTERATION WITH DISTAL SACRECTOMY FOR FIXED RECURRENT RECTAL CANCER**

**YOSHIHIRO MORIYA**

*National Cancer Center, Tokyo, Japan*

Among recurrent rectal cancers after curative intent, locally recurrent tumor is very common. For the local recurrent tumor, radiotherapies\_chemotherapies, and surgical treatments have been employed singly or as part of multi-modality treatment over the last several decades, resulting in certain outcomes but not satisfactorily yet. Outcome after re-resection of various local recurrent tumors has been shown. Few reports have addressed outcome after extended surgery for fixed recurrent tumor and measures to reduce surgical invasiveness

We investigated surgical indication, techniques to minimize blood loss and reduce complication, and oncological outcomes in 57 patients who underwent total pelvic exenteration with sacrectomy between 1983 and 2001.

Margins were negative in 48 patients (84%). A comparison between two period (1983-'92 and '93-01) showed a mean blood loss decreased from 4229 to 2500 ml ( $p = 0.002$ ), with favorable learning curve. Two hospital deaths were observed in early period, none in latter period. The most common sacral amputation was the level of S3, followed by the S4 and S2 inferior margins. The pelvic sepsis was 39%. According to multivariant analysis R0 and negative CEA predicted improved survival. In 48 patients with R0 3-year and 5-year disease-free survival were 62% and 42%.

In conclusion, under the strict patient selection, total pelvic exenteration with distal sacrectomy is feasible radical approach for fixed recurrent tumor. Careful performance with the proper procedure to decrease blood loss should achieve a favorable learning curve.

## **POST-OPERATIVE RADIOTHERAPY FOR RECTAL CANCER - A DESPERATE MEASURE?**

**FUAD ISMAIL**

*Department of Radiotherapy and Oncology, Hospital Universiti Kebangsaan Malaysia,  
Kuala Lumpur, Malaysia*

Surgery for rectal cancer has been associated with high risk of local recurrence. These relapses not only signify incurability but also cause significant morbidity to patients. Post-operative radiotherapy has been used in selected high-risk groups to improve local control rate. The sequencing of therapy allows proper patient selection thus patients with early stage disease would not receive unnecessary treatment. Addition of chemotherapy with radiation has improved local control as well as survival. Pre-operative radiotherapy has been used previously for locally advanced tumour especially those which are marginally respectable. Tumour response is potentially better with good vascular supply and less small bowel toxicity. A variety of regimes has been used and currently the "short-course" and "long course" therapy are in vogue. The reduced ability to select patients may cause over-treatment for those with lower stage disease. Selection of pre- versus post-operative treatment is partly dependant on institution with the Atlantic Ocean being the most prominent divide. This paper discusses the merits of radiotherapy and the current available data.

## TOTAL MESORECTAL EXCISION – THE PERFECT SPECIMEN AND REPORT

R PATHMANATHAN

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

Colorectal cancer (CRC) is a common and important malignancy locally, and the management is a team process involving pathologists, surgeon(s), radiologists, medical and clinical oncologists, and specialized nurses. However, the disease is generally badly reported, as many pathologists remain ignorant of the importance of their role. The pathologist's role is integral to the management of CRC, as failure to report on key features leads to under treatment. The use of a proforma has advocated widely, and studies have shown that it to be beneficial. Importantly, in stage II/Dukes' B cases, extramural spread and extramural vascular invasion, peritoneal involvement, adequacy of resection and the presence of perforation must be documented. All of these afore-mentioned factors may influence the decision making process as to whether adjuvant therapy is to be administered. The careful assessment of the surgically created circumferential resection margin (CRM) is important and the dissection and sampling must be standardized to allow comparison of results between trials and centres.

### PLENARY LECTURE 1

## FISTULA-IN-ANO STANLEY M GOLDBERG

*Division of Colon and Rectal Surgery, Department of Surgery, University of Minnesota, Minnesota, USA*

### INTRODUCTION

Anorectal abscess and fistula represent the acute and chronic forms, respectively, of anorectal suppurative disease. Abscesses generally arise from an acute infection in an anal gland and its associated ducts through a process known as the cryptoglandular theory of anal sepsis. However other potential sources of anal sepsis include foreign bodies, malignancy, trauma, tuberculosis, actinomycosis, leukemia, postoperative infections, inflammatory bowel disease and simple skin infections.

### CLASSIFICATION

A thorough understanding of anorectal anatomy is required to be able to manage anal suppurative disease safely. Classification systems have been designed to characterize significant aspects of both abscesses and fistula to which safe management can be applied.

Abscesses are classified according to the perirectal space involved with the acute process. These spaces are known as the perianal, ischioanal, intersphincteric, submucosal, and deep postanal and supralevator spaces. Any abscess can involve more than a single space. For example, a "horseshoe" abscess originates in an infected gland in the posterior midline and then extends through the intersphincteric and deep postanal spaces to one or both of the ischioanal spaces.

Fistulas have been classified by a number of methods however the most popular classification probably remains that of Parks. This classification includes four main subgroups. The groups are named according to the course taken by the fistula. Thus, the groups are intersphincteric, transsphincteric, suprasphincteric, and extrasphincteric.

## DIAGNOSIS

The diagnosis of an abscess is consistent with common symptomatology. The combination of slow, gradual onset of constant pain with increasing intensity of pressure and fullness should suggest an abscess until proven otherwise. This is true even if there are not associated physical findings such as can be noted with “hidden abscesses” such as those in the intersphincteric and deep postanal spaces. In some instances, an examination under anesthesia may be necessary to confirm a diagnosis.

Most patients with fistulas will have a history of previous abscess. Fistula symptoms are of intermittent quality and include intermittent or persistent drainage of purulent or serosanguinous fluid from an external opening near the anal verge. Symptoms of pruritis frequently accompany this drainage.

Although physical examination most often confirms a suspicion of the diagnosis, occasionally special studies are necessary to define the specifics of classification. Endoscopy may be necessary to rule out inflammatory bowel disease. Contrast fistulography may identify unsuspected extensions of complex fistulas. Anal ultrasonography with or without hydrogen peroxide injection may help to delineate the path of fistula tracts and confirm the relationship of an abscess to the muscular anatomy of the anal sphincter. Magnetic resonance imaging has been shown to accurately define secondary tracts.

## TREATMENT

The treatment of recently diagnosed anorectal abscess should generally be considered a surgical emergency. Perianal abscesses are usually easily drained in an office setting while most other anal abscesses are best managed within the operating room with more extensive anesthesia. Antibiotics should be reserved for adjunctive therapy in the special circumstances of valvular heart disease, immunosuppression, extensive associated cellulites and diabetes.

The management of fistulas is at once more complex than the management of abscesses. Simple low fistulas are most often treated with a simple laying open of the tract (fistulotomy). If a fistula is positioned such that it traverses a significant portion of the sphincter, division by laying open the fistula tract could lead to incontinence. The utilization of a seton may be used for marking, draining, cutting, or staging.

Advancement flaps represent a sphincter sparing technique wherein the fistula tract is debrided, the internal opening is excised and a flap of mucosa, submucosa and part of the internal sphincter is advanced and sutured over internal defect. As an alternative to flaps, fibrin glue can be injected into the tract after it has been curetted and the internal opening closed. Healing may be as high as 60%.

Recent studies have advocated the use of a fibrin plug. These are only preliminary studies and this technique may be helpful in management of complex supra sphincter and transsphincteric fistulas.

Complications frequently arise in the treatment of anal suppurative disease and include urinary retention in up to 25% of patients. Recurrent fistula risk is probably about 3 to 7%. The risk of incontinence ranges from about 18 to 52% and is dependent on the complexity of the fistula, sex (female > male), amount of sphincter divided for treatment and a history of prior fistula surgery.

## SUMMARY

Anal suppurative disease carries a high risk of complications if not properly managed. Proper management requires an understanding of basic anatomy of the anorectum. An expanding array of management choices has made current treatment more effective and safer than in years past. These choices include the judicious use of antibiotics, advancement flaps, setons, fibrin glue, fibrin plugs and anatomic surgery.

**ANASTOMOTIC LEAKS – IMPLICATIONS AND SALVAGE****JOE TJANDRA***Colorectal Surgery, Epworth, Royal Melbourne and Royal Women's Hospitals, Melbourne, Australia***ANASTOMOTIC LEAKS AFTER COLON AND RECTAL RESECTION**

- Incidence clinical
  - 2% colon
  - 7% rectal
- Incidence Radiologic
  - up to 66% (rectal)
- Management depends on:
  - cause, size, location
  - effects on patient
  - patients general condition

**CAUSES**

- Technical, local, systemic factors
- Technical
  - ischaemia (nuisance bleeding)
  - tension
  - quality of anastomosis
- Sepsis
- Comorbidity
  - diabetes, ascites, steroids
  - hypovolaemia, immune status
  - malnutrition

**DIAGNOSIS**

- Clinical features (minor, major)
- Features vary from “looking unwell”;  
confusion/mental alertness; (picking at bed clothes): lab values abnormal..... To overt peritonitis
- Imaging
  - contrast studies (GGE;CT)
  - endoscopy
  - EUA

**MANAGEMENT OF MINOR LEAKS**

- Contributes little to morbidity
- Not life threatening
- Manifestations
  - local signs of sepsis
  - radiologic
  - transient faecal drainage

**EXTRAPERITONEAL RECTAL ANASTOMOTIC LEAK**

- Usually posterior midline
- Contribution from
- Difficult anastomosis
- Infected presacral collection
- Distal obstruction (? sphincters)
- Ischaemia

## TREATMENT OF MINOR LEAK FROM LOW COLORECTAL ANASTOMOSIS

- Antibiotics
- Rectal irrigation
- Transanal catheter through anastomosis (poor drainage and cavity irrigation)
- Transgluteal drainage? (risk of extrasphincteric fistula)

## MAJOR LEAK

- Spectrum of large abscess, persistent faecal fistula, peritonitis, septic shock; cellulitis abdomen, crepitus, death
- Manage according to severity and co-morbidities
- Drains, if present, may assist in producing faecal fistula; may be walled off
- Urgent surgery usually required with major leaks

## NO PERITONITIS – PATIENT STABLE

- Localization to form abscess with or without fistula
- Percutaneous drainage (window vs. no window)
- Timing of fistulography
- Catheter reposition p.r.n.
- Timing of p.c. catheter removal

## PERITONITIS – PATIENT UNSTABLE

- Requires prompt laparotomy
- Role for laparoscopy?
- Goal – eliminate continued source of sepsis: live patient!!
- Multiple choices – usually disconnection and Hartmann's best

## MANAGEMENT OF MAJOR ANASTOMOTIC LEAK – ALTERNATIVES

- External drainage \*
- Suture defect +/- diversion \*
- Faecal diversion\*, ± drainage ( note: loaded colon)
- Resect and re-anastomosis ± diversion??
- **Resect and Hartmann's\*\***
- Laparostomy (rare)

*\* Not recommended*

*\*\*Preferred*

## SPECIAL CONSIDERATIONS

- Small bowel enterotomy (ies) with lap.
- Very obese: needs stoma
- Major ventral hernia
- Distal stump cannot be oversewn
- Flexure mobilization
- Delayed presentation

## SUBSEQUENT MANAGEMENT

- Stricture (long, short, moderate, tight)
- Issues with:
  - later reconstruction (stump mobilization)
  - Endo anal anastomosis
  - Function with low reconstruction
  - Role of pull-through

## THE EVALUATION AND TREATMENT OF PELVIC FLOOR DISORDERS

JOE J TJANDRA

*Epworth, Royal Melbourne and Royal Women's Hospitals, Melbourne, Australia*

Pelvic floor disorders are common and distressing. In two Australian studies fecal incontinence was found to occur in 11.2% and 15% of subjects. A number of conditions are known to cause incontinence, which can be further impaired by anal and rectal surgery. The prevalence of constipation increases with age and reaches 25 percent in the elderly. Anorectal pain associated with levator syndrome and proctalgia fugax occurs in 5 to 8 per cent of the population. As a result, a multitude of tests have arisen over the years to assess the motor and sensory aspects of the anorectal region.

### PRINCIPLES OF EVALUATION

1. Determine the predominant symptoms and their severity
2. Assess for risk factors towards the symptoms
3. Document co-morbidity and anticipated quality of life of patients
4. Exclude concomitant colorectal disorders e.g. Neoplasm.

### ASSESSMENT

1. History and physical examination, with emphasis on bowel pattern, continence and evacuation difficulties, prolapse, bulges, and urinary symptoms. Past surgical and obstetric histories are relevant.
2. Anorectal exam and proctoscopy
3. Colonoscopy if risk factors or if there are concerns
4. Three-dimensional endorectal ultrasound
5. Anorectal physiology

### ANORECTAL PHYSIOLOGICAL TESTING

*(Adapted from Tjandra et al, Anorectal Physiological Testing in Australia. Aust NZ J Surg 2002; 72: 757-9)*

The physiology of the anorectal region is complex. The methods that are used for the systematic study of anorectal physiology include anorectal manometry, pudendal nerve terminal motor latency and electromyography (EMG) of the pelvic floor. Various special tests include balloon expulsion test, mucosal electrosensitivity, recto-anal inhibitory reflex and rectal compliance. Defecating proctography is sometimes included as part of the assessment. A leader in the field was the late Sir Alan Parks from St Mark's Hospital, London. Since his time, significant improvement in testing techniques has developed. Computerised technology has facilitated anorectal manometry and tests for pudendal nerve terminal motor latency. The testing procedure is now faster and less prone to observer error. Concentric needle EMG has largely been replaced by endoanal ultrasound in the mapping of anal sphincter defect.

Anal manometry is a simple, non-invasive method of measuring internal and external anal sphincter tone. It has an important role in the assessment of anal sphincter and rectal function, although experienced surgeons would derive comparable information from a careful digital rectal examination. However, in a number of patients the manometric measurement shows that clinical examination to be incorrect. Objective measurements with anal manometry allow a more precise measurement of changes in anal canal pressures before and after surgical intervention. Anal manometry is also more reliable than digital rectal examination in assessing the functional length of the anal sphincter. Such information might be important in the decision about a fistulotomy for fistula-in-ano.

A most valuable test has been pudendal nerve terminal motor latency measurement in patients with fecal incontinence. This involves a transrectal stimulation of the pudendal nerves and measurement of the conduction time along the distal part of the nerve using a disposable electrode (Dantec; Skovlunde,



Denmark). Weakness of the external anal sphincter due to pudendal nerve damage occurs due to a direct stretch-induced injury during prolonged second-stage labour or from chronic straining at stool as in obstructed defecation. Thus prolonged pudendal nerve terminal motor latency occurs in patients with neuropathic fecal incontinence. Repeated vaginal deliveries have been shown to have a long-term adverse effect on anorectal physiology in a population of randomly selected healthy perimenopausal women. Women with prolonged pudendal nerve terminal motor latency after vaginal delivery have an increased risk of developing faecal incontinence compared with women with normal latencies. The nerve damage also progresses with time in patients with fecal incontinence. Pudendal nerve studies are of particular value in patients with fecal incontinence. In various studies, a prolonged terminal motor latency has been shown to be a significant adverse factor following a sphincter repair.

Anismus or paradoxical contraction of the puborectalis and levator muscles, as diagnosed using electromyography and defecating proctogram may cause obstructed defecation and chronic constipation. In some cases, failure of relaxation of external anal sphincter and puborectalis during simulated defecation straining might be due to the patient's inability to comply with the instructions in the artificial laboratory environment. Thus the significance of physiological anismus has to be interpreted in the context of symptoms. Improvement in symptoms of obstructed defecation following biofeedback therapy has been reported in 84 percent of patients evaluated in seven studies.

The internal sphincter relaxes in response to rectal distension via an intrinsic neural pathway in the wall of the anorectum. This rectoanal inhibitory reflex is absent in Hirschsprung's disease and this is a useful screening test for this condition. There are however other situations where the rectoanal inhibitory reflex might also be absent, as with a very low resting pressure due to a weak internal anal sphincter, megarectum or following anorectal surgery. Anal mucosal electrosensitivity is tested using a special ring electrode (Dantec, Skovlunde, Denmark) and is a further measure of pudendal nerve damage. Some patients with chronic constipation have a reduced rectal mucosal electrosensitivity, suggesting a rectal sensory neuropathy. This special test may prove useful but needs further evaluation.

Anorectal physiological testing has improved our understanding of the mechanisms of various defecatory disorders. The tests have been validated in several clinical studies. However, there are few large-scale studies that have attempted to validate anorectal physiological testing against other techniques or to evaluate outcome assessment with a properly controlled study population or treatment options. There are important deficiencies within the physiological testing itself as it focuses on the study of phenomena in isolation, in an artificial environment and often for relatively short periods of time. Ambulatory anorectal manometry is an attempt to study patients under conditions that are more physiologic than those in an investigative laboratory. While ambulatory anorectal manometry is currently cumbersome to perform, it is likely to provide further important information in patients suffering from pruritus ani or obstructed defaecation.

There are significant manometric variations even within "normal" asymptomatic subjects, dependent on age, gender and parity. Discrepancies between physiologic measurements and clinical findings are often due to technical factors. For example, pudendal nerve terminal motor latency measures only the fastest conducting fibres in the pudendal nerve. Hence a damaged pudendal nerve might show a normal conduction time, so long as some fast-conducting fibres remain. Considerable overlap occurs in anorectal physiological measurements between constipated and incontinent patients, and no single physiologic parameter is indicative in either of these defecatory disorders, although extremes of a measurement are more likely with certain symptoms. Thus a patient with very low anal canal pressures, a short functional anal canal length, and bilaterally prolonged pudendal nerve terminal motor latencies is more likely to have fecal incontinence. A patient with a very high maximum tolerated rectal volume and physiologic anismus is more likely to have obstructed defecation.

Anorectal symptoms are often not isolated phenomena, and may be part of a systemic disorder such as diabetes with neuropathy, a neuromuscular disorder, or a functional bowel disorder such as irritable bowel syndrome. Many patients with defecatory disorders have dysmotility of the more proximal bowel as well as abnormal anorectal physiological parameters. It is often not clear in these complex situations if the physiological phenomenon in the anorectum is primary or secondary to the underlying defecatory disorder. Often clinical evaluations together with the pattern of the test results, rather than individual test measurements, are more important in defining the underlying defaecatory disorder, predicting the natural history and indicating the likely outcome of surgery.

Anorectal physiological testing has been shown to be useful in the assessment of severe fecal incontinence and obstructed defecation. Anorectal manometry is also helpful prior to surgery for complex fistula-in-ano or a repeat lateral sphincterotomy. Prior to an ultra-low rectal resection or a restorative proctocolectomy in patients with borderline fecal continence, formal anorectal physiological testing is also valuable in providing information about the likely success of sphincter preservation. In the management of women with complex urogynecological disorders, anorectal physiological testing might be helpful as defecatory disorders often co-exist and might be corrected at the same time.

Electromyographic anismus is commonly associated with obstructed defecation in children, although it is difficult to perform the physiological testing reliably in an anxious child. Many children continue to have defecatory disorders following surgery for Hirschsprung disease or imperforate anus. Anorectal physiological testing, often together with endoanal ultrasound will help to define the status of the anorectum. However, there are few large-scale clinical studies in children, and the range of normal values established in adults might not be applicable to children. In Melbourne, children following surgery for Hirschsprung disease are evaluated later in life jointly by the combined team at the Royal Children's Hospital and our Center. These children are assessed using a standard set of clinical criteria, and if clinically indicated, by endoanal ultrasound and anorectal physiological testing. The information gained from such an assessment might further clarify our understanding of the anatomy and function of the anal canal and pelvic floor.

The quality control of the testing is important. The testing technique should be standardised and should be carried out in recognised centers. The use of various definitions for anorectal physiology should be uniform, as produced by the International Working Party comprising representatives from the American Society of Colon and Rectal Surgeons, Association of Coloproctology of Great Britain and Ireland and the Colorectal Surgical Society of Australia. A consensus statement of these definitions was simultaneously published in the *Diseases of the Colon and Rectum*, *Colorectal Diseases* and the *ANZ J Surgery*. The purpose of these efforts was to develop standardized terminology for use in academic presentations and publications. There should be a forum for these small groups of testing centers to have regular meetings and audit to facilitate development in this important and challenging subspecialty of colorectal surgery.

The time for more widespread adoption of anorectal physiological testing has arrived and colorectal specialists should be ready to provide such services in a uniformly high-quality fashion.

## **PRINCIPLES OF TREATMENT**

Treatment is directed towards the predominant symptoms, as mixed symptoms are common. The nature of the treatment is also tailored to the baseline quality of the patients.

**INITIAL MANAGEMENT** is usually non-operative with dietary manipulation, bulking agents and pelvic floor exercises. All patients at the Melbourne Center will have access to multi-disciplinary care involving dietician, physiotherapist and continence counsellor.

## SPECIALISED TREATMENT

Fecal incontinence: Sphincter repair, injectable PTQ implant, sacral nerve stimulation and less commonly, artificial bowel sphincter.

**Obstructed defecation syndrome:** STARR procedure (stapled transanal rectal resection), repair of rectocele, sacral nerve stimulation

### **Rectal prolapse:**

Fit patient: Laparoscopic Abdominal rectopexy + (if constipated, with long redundant sigmoid colon) Anterior resection

### **Frail patient: Perineal approach**

- Larger prolapse : Perineal proctosigmoidectomy
- Smaller prolapse : Delorme operation

## SYMPOSIUM 3 • ANORECTAL FUNCTIONAL DISORDERS

### **ANTERIOR RESECTION SYNDROME**

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“Anterior Resection Syndrome” was first coined in 1996 to refer to a cluster of symptoms of stool frequency, urgency and soiling complained by a third of patients following anterior resection with straight anastomosis for rectal cancer. This syndrome is more common for anastomosis at or below 6 cm from the anal verge, after pre- or post-operative radiotherapy and following operative complications like anastomotic leaks or pelvic infections. It is mitigated by colonic J-pouch.

With the wide spread adoption of TME (Total Mesorectal Excision) for mid and low rectal cancer that necessitates ultra-low anastomosis, coupled with radiotherapy for T3 and T4 cancer, Anterior Resection Syndrome is a significant problem, even if it is still preferable to a permanent colostomy. Sound judgment in selecting patients for radiotherapy, careful surgery to minimal pelvic complications and the use of colonic pouch are necessary to minimise this distressing syndrome.

## SELECTING THE PROPER OPERATION FOR RECTAL PROLAPSE

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### INTRODUCTION

Rectal prolapse is not an uncommon condition and has been described in literature dating back centuries. It afflicts both the very young and the old. Early remedies described in Egyptian and Greek writings include honey suppositories and use of gravity to reduce the prolapse. Modern management has since evolved with better understanding of the etiology and pathophysiology of the disease. Because the pattern of disease is different in both extremes of age, treatment for these two groups of patients are also different and will both be considered separately.

Complete rectal prolapse is defined as an abnormal descent of all layers of the rectum with protrusion through the anus. This is also termed as procidentia. A variation of presentation will be the hidden or internal prolapse whereby the prolapse is in a non-protruding state.

Procidentia is to be differentiated from partial rectal prolapse or rectal mucosal prolapse. This is defined as an abnormal descent of only the rectal mucosa with or without lumen and only mucosal thickness on palpation in the latter and circular folds, posterior bowel lumen and all layers of the rectum on palpation in procidentia.

Complete rectal prolapse will always necessitate surgery and the rest of this discussion will be confined to the management of this entity.

### ETIOLOGY

There are two theories postulating the cause of rectal prolapse. This is based on observations of abnormalities in local anatomy associated with the prolapse.

#### Sliding Hernia Theory

This was proposed by Moschowitz based on the observation that the bowel lumen is usually posteriorly placed in procidentia and small bowel is occasionally present anteriorly in the hernial sac included in the prolapse. The concept is that rectal procidentia is actually a sliding perineal hernia, which develops at a weakness in the transversalis fascia secondary to increased intra-abdominal pressure. Hence, the prolapse starts as a hernia in the pouch of Douglas and because the peritoneal reflection is closely adherent to the rectum and the anus is relatively fixed, the hernia protrudes as an intussusception through the anal canal.

#### Intussusception Theory

Devadhar proposed that rectal procidentia starts as a circumferential intussusception of the rectum. This has been confirmed by cineradiographic studies by several authors. [Brodin, 1968; Theuerkauf, 1970] Intussusception may be due to congenital failure of fixation of the mesorectum to the sacrum with straightening of the anorectal angle or secondary to trauma, obstetric injury or surgical mobilization of the rectum.

[Ripstein, 1963] A nonrelaxing puborectalis muscle may play a role too [Porter, 1962]

### PATHOPHYSIOLOGY

The following anatomical abnormalities have been observed:

- deep pouch of Douglas-abnormally low descent of peritoneum covering the anterior rectal wall
- patulous lax anal sphincter
- weak pelvic floor with diastasis of levator ani muscle
- lack of fixation of rectum posteriorly against the sacrum
- redundant rectosigmoid colon with intussusception

## INVESTIGATIONS

Very often the prolapse is reducible and further investigations such as sigmoidoscope or barium enema examinations may be ordered to confirm the diagnosis and exclude associated neoplasm, inflammatory bowel disease or diverticular disease. Clues in cases of hidden internal prolapse include focal hyperemia and edema in the anterior rectal wall, colitis cystica profunda and a solitary rectal ulcer. In severe prolapse, the ureters may also be pulled along with the rectum, making pelvic dissection hazardous. In mild cases of procidentia where the external prolapse is intermittent and spontaneously reduces itself, the prolapse may be demonstrated by cine-defecography. An internal intussusception that starts 6-8 centimeters upward in the rectum will be seen. In patients with a long history of constipation, transit marker studies will be useful to identify patients with total or colonic inertia, who would require a more extensive bowel resection.

## MANAGEMENT

### Abdominal procedures

Obliteration of peritoneal Pouch of Douglas

### Meoschocowitz procedure

Based on the sliding perineal hernia theory, the procedure proposed entails obliteration of the pouch of Douglas by a series of purse-string sutures. However, this procedure has been abandoned because of a recurrence rate of up to 80%.

### Anterior Rectopexy

The rectum is mobilized and fixed anteriorly to the peritoneum, pelvic brim or uterus. Recurrence: 16-35%.

### Posterior Rectopexy

Following standard mobilization, the rectum is attached posteriorly to the hollow of the sacrum using foreign materials or sutures. This prevents prolapse from occurring until fixity from scar tissue is achieved. Recurrence: 2 – 6%.

### Ivalon Sponge

Full mobilization of the rectum with division of the lateral stalks. A rectangular piece of sterilized Ivalon sponge is moistened and fastened to the pre-sacral fascia using non-absorbable sutures. The rectum is then drawn upwards and placed over the sponge. The lateral edges of the sponge are then wrapped around the rectum to encompass three quarters of the circumference. An anterior portion of the rectum is thus left free to expand. The wrap is extraperitonealized. Major complications include pelvic abscess (2.6-16%) which requires drainage and removal of the sponge.

### Ripstein

A 5-centimeter wide T-shaped mesh (Teflon or Marlex) around the mobilized rectum and the free ends are sutured to the presacral fascia. The sling is kept loose, admitting one to two fingers between bowel and sacral fascia, to avoid obstructive problems ranging from mild constipation to fecal impaction. The upper and lower borders of the sling as well as the T-stem is sutured to the bowel to prevent sliding up and down the bowel. Later modifications include placing the mesh posterior to the rectum and suturing the ends anteriorly, leaving anterior one-third to one-fourth of the rectal wall free to expand.

### Anterior Resection

The basis of this procedure is that excess redundant bowel. Accounting for many of the post-operative obstructive symptoms is resected and the healing anastomosis causes fibrosis and fixation of the bowel to the sacral hollow preventing recurrence. However, as with all resections, there is a risk of an anastomotic leak. Recurrence 2%.

### **Abdominal Rectopexy and Sigmoid Resection (Frykman-Goldberg)**

Complete mobilization of the rectum down to the pelvic floor without division of the lateral stalks. The rectum is then hitched upwards by suturing the lateral stalks to the periosteum of the sacrum. The endopelvic fascia is sutured anteriorly to the rectum to obliterate the cul-de-sac. The sigmoid and descending colon is then mobilized and the redundant sigmoid is resected. The descending colon is then anastomosed to the rectum below the level of the pelvic brim. Post-operative continence is improved and recurrence rates range from 2 – 9%.

### **Restoration of Pelvic Floor**

#### ***Moschocowitz-Graham procedure (abdominal approach)***

This was first described by Graham in 1942 and involves reefing of the levator muscles and obliteration of the pouch of Douglas. This can also be performed by a perineal approach and may be combined with other procedures such as resection. Recurrence rate is high: 15 – 30%.

### **Perineal procedures**

#### **Perineal Rectosigmoidectomy**

##### ***Altemeir***

First described by Mikulicz in 1889, this method was popularized by Altemeir. With the patient in the lithotomy or prone-jackknife position, a circumferential full thickness incision is made 1.5 – 2.5 centimeters proximal to the dentate line. The hernia sac is opened and the excess peritoneum is excised. The mesentery of the redundant bowel is serially clamped, divided, and ligated until the bowel cannot be pulled down any further. The pouch of Douglas is obliterated by a series of purse-string sutures and the levator ani muscle is reefed anteriorly to the bowel. The excess bowel is then amputated and anastomosis is achieved hand-sewn or by use of staplers. Although Altemeir reported a recurrence of only 2.8%, subsequent series have shown that it was much higher at 50 – 60%. Our experience has been somewhat similar.

##### ***Delorme's***

First described by Delorme in 1900, the mucosa from the prolapsed bowel is first stripped then the denuded muscular wall plicated and finally the mucosal ends anastomosed. This effectively results in a cuff of muscle above the pelvic floor that acting like a pessary. Recurrence rates of 7 – 24%.

### **Anal Encirclement**

#### ***Thiersch***

Anal encirclement using silver wires was first described by Thiersch in 1891. Although simple, it was plagued with resultant failure and erosion of wire through the perianal skin. The technique involves making small radial perianal incisions in the right anterolateral and left posterolateral aspects of the perineum, one centimeter from the anal verge. Through these incisions, the circlage wire is tunneled around the anal sphincter and tightened.

### **LAPAROSCOPIC PROCEDURES**

The widespread success of laparoscopic cholecystectomy led to the development of laparoscopic procedures of complete rectal prolapse. The principles of surgical treatment remain the same: to correct the observed anatomical defects in the hope of preventing a recurrence. Laparoscopic rectopexy may be combined with resection. Reported advantages include better cosmesis, less postoperative pain ambulation with a shorter hospital stay. Operative time however, can be much longer, a result of a learning curve. Laparoscopic surgery is not without its perils. Bartolo recently reported two cases of ureteric leaks in his personal series of 40 patients.

### **CHOICE OF OPERATION**

Faced with a multitude of options, the choice of an optimal treatment is difficult. It is best tailored to the individual patient and surgeon. When compared with perineal procedures, an abdominal procedure has

traditionally been associated with lower recurrences and better functional outcome. This is still the choice in younger patients with low operative complications, as rectopexy using foreign materials such as Marlex mesh or Ivalon sponge. Although the addition of a resection carries a risk of an anastomotic leak, albeit low, it has been shown to have functional benefits. The lateral stalks are also left intact for functional considerations.

For elderly and high operative risk patients, perineal procedures remain popular for its relative ease and low morbidity. The price, of course, is a higher recurrence rate but most proponents argue that another perineal procedure can always be repeated safely.

Finally, the skill and the surgeon's familiarity with the procedure should be considered.

#### **EVOLUTION OF MANAGEMENT OF UNIVERSITY OF MINNESOTA**

We reviewed our experience over a 19-year period to assess choice of operation, recurrence rates, and functional results. We identified 343 patients who underwent surgery for complete rectal prolapse from 1976 to 1994. Charts were reviewed and follow-up (mean 75 months) was obtained by mailed questionnaire (133 patients, 39%) and telephone interview (31 patients, 9%). One hundred seventy-nine patients (52%) were lost to follow-up. One hundred eighty-two patients underwent perineal rectosigmoidectomy (PRS) and 161 abdominal rectopexy with bowel resection (RP/RES). The percentage of patients who underwent perineal rectosigmoidectomy increased from 22% in the first 5 years of the study to 79% in the most recent 5 years. We conclude that abdominal rectopexy with bowel resection is associated with low recurrence rates and good restoration of function in complete rectal prolapse patients.

#### **SYMPOSIUM 4 • CANCER**

### **GENETICS OF COLORECTAL CANCER. CLINICAL APPLICATIONS**

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Better management of colorectal cancer depends on better understanding of colorectal carcinogenesis, and molecular genetics is the key to unlock this complex process. Great advances are being made and increasingly clinical applications of molecular genetics are becoming more evident.

Many genes are involved in the Adenoma-Carcinoma Sequence, hence the heterogeneous nature of colorectal cancer seen in clinical practice. Mutations in APC and Mismatch Repair Genes and their products, are used in the diagnosis of FAP and HNPCC in suspected family members. Microsatellite Instability is used for prognosis and chemotherapy susceptibility test of some colorectal patients. Anti-growth factor agents are being used in treating patients with metastasis. Stool DNA tests are now commercially available for population screening.

Molecular genetics is now an integral part of the management of colorectal cancer and colorectal surgeons need to keep abreast with its progress.

## **MUTLI-MODALITY TREATMENT OF SYNCHRONOUS LIVER METASTASES FROM COLORECTAL CANCER (CRC)**

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Colorectal cancer is one of the most common malignancies with approximately quarter of patients having liver metastases at presentation. Eventually over 70% of patients will develop liver metastases. However of these only 20-30% of these patients will be eligible for surgery. Even though chemotherapy is usually the first line treatment for CRC metastases, newer options are becoming available especially for those that fail standard chemotherapy. Newer treatments, such as targeted chemotherapy (using drug eluting beads) and local ablative techniques like radiofrequency ablation (RFA) are becoming feasible alternatives.

Recent study using RFA for CRC metastases showed the overall median survival was 28 months, and 1-, 3- and 5-year survival was 90.0%, 42.0% and 30.5%, respectively. This compares favorably with survival rates reported from other studies, in which patients who received chemotherapy treatment only, without concurrent use of local intervention. The authors suggest that RFA should be considered part of first-line management for unresectable CRC-related liver metastases. This study suggests that optimal cytoreduction upfront with methods such as RFA, followed by modern systemic chemotherapy, offers the best results. The results provide strong support for this concept of "multi-modality treatment" of metastatic colorectal cancer.

Generally RFA is offered to those patients who were not eligible for hepatic resections as a result of the tumors' locations, the number or size of the lesions or poor medical condition. Access using RFA can either be percutaneous or at laparotomy. In fact RFA can be combined with hepatic resection. Size and access route are significant factors in RFA failure rates as well as the type of RFA electrode type on local recurrence. The local rate of recurrence for similar average original tumor sites for RITA (RITA Medical Systems, Inc. Nasdaq), devices was 26.8% compared to 60.3% for the Radiotherapeutics (Boston Scientific) expandable electrode and 42.9% for the Radionics Cool-tip clustered triple electrode.

Other studies using Irinotecan-Eluting Beads ((DC beads, Biocompatibles UK Ltd.) administered intratumorally to patients with liver metastases from CRC in a small sample of patients treated with irinotecan- eluting beads at a dose of 100 mg every three weeks. The findings showed that TACE with irinotecan eluting beads was feasible and well tolerated with right upper quadrant pain lasting four days was felt by all patients. Reduction of >50% of CEA levels (a marker used to diagnose or indicate recurrence of cancer) and of the lesional contrast enhancement was observed in all the patients after 30 days.

Further work is needed to confirm the results of these preliminary studies.



**ROLE OF PET-CT IN COLORECTAL CANCER****MOHAMED ALI ABDUL KHADER***Department of Nuclear Medicine, Penang Hospital, Penang, Malaysia*

Positron emission tomography (PET) is a functional imaging modality that provides mapping of glucose metabolism in the whole body. The glucose analogue fluorodeoxyglucose is labelled with the cyclotron produced, positron emitting radioisotope fluorine-18. The resulting radiopharmaceutical 2-<sup>18</sup>F-fluoro-2-deoxy-D-glucose (FDG) is a substrate for glucose transport proteins (Glut) in cell membranes and accumulates intracellularly. It undergoes the same uptake as glucose but is metabolically trapped and accumulated in the cancer cell after phosphorylation by hexokinase. Increased metabolic activity in malignant tissue is accompanied by increased glucose uptake relative to that of surrounding normal tissue. This focal increase in glucose uptake can be identified with FDG PET scanning. PET scanning is now an important cancer imaging tool and at times it has become an indispensable tool in clinical nuclear medicine. This presentation give an overview of the value of PET-CT in both the diagnosis and staging, detection of locoregional and distant metastasis, diagnosis for recurrence and the monitoring the response to treatment in Colorectal Cancer.

**FOLLOW UP AFTER CURATIVE RESECTION OF COLORECTAL CANCER – A META-ANALYSIS****JOE J TJANDRA, MIRANDA KY CHAN***Department of Colorectal Surgery, Royal Melbourne Hospital and Epworth Hospitals, University of Melbourne, Melbourne, Australia***OBJECTIVE**

This is a systematic review to evaluate the impact of various follow up (FU) intensities and strategies on the outcome of patients following curative surgery for colorectal cancer (CRC).

**METHODS**

All randomized trials (RCTs) up to September 2006, comparing different follow up intensities and strategies, were retrieved. Meta-analysis was performed using the Forest plot review.

**RESULTS**

Eight RCTs with 2,923 patients with CRC undergoing curative resection were reviewed. There was a significant reduction in overall mortality in patients having intensive follow up (intensive vs less intensive FU: 21.8% vs 25.7%;  $p = 0.01$ ). Regular surveillance with serum CEA ( $p = 0.0002$ ) and colonoscopy ( $p = 0.04$ ) demonstrated a significant impact on overall mortality. However, cancer-related mortality did not show any significant difference. There was no significant difference in all-site recurrence and in local or distant metastasis. Detection of isolated local and hepatic recurrences was similar. Intensive follow up detected asymptomatic recurrence more frequently (18.9% vs 6.3%;  $p < 0.00001$ ) and 5.91 months earlier than less intensive follow up protocol; and these were demonstrated with all investigation strategies used. Intensive surveillance program detected recurrences that were significantly more amenable to surgical re-resection (10.7% vs 5.7%;  $p = 0.0002$ ). The chance of curative re-resection were significantly better with more intensive follow up (24.3% vs 9.9%;  $p = 0.0001$ ), independent of the investigation strategies used ( $p < 0.05$ ).

**CONCLUSIONS**

Intensive follow up after curative resection of colorectal cancer improved overall survival and re-resection rate for recurrent disease. However the cancer-related 3 mortality was not improved and the survival benefit was not related to earlier detection and treatment of recurrent disease.

## CURRENT STATUS OF NERVE SPARING SURGERY FOR RECTAL CANCER

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The extended lymphadenectomy was applied in Japan from the 1970s to the 1980s, achieving good survival rates in the treatment of advanced rectal cancer. On the other hand, the extended resection resulted in many undesirable effects, such as urinary and sexual dysfunction. But since then, the elucidation of the growth pattern of rectal cancer specially on what concerns lateral spread, and the advances in imaging diagnostic methods and surgical neuroanatomy allowed the development of a nerve sparing operation. Our nerve sparing surgery has been developed and refined since mid 1980s and we now have an up to 20-year experience on this technique. It is our objective to present surgical indication, techniques, and functional and oncological outcome.

We divide the nerve preserving surgery into three types;

- type I: total preservation of the autonomic nerves;
- type II: complete preservation of the pelvic nerves with sacrifice of
- type III: partial preservation of the pelvic plexus.

We will demonstrate type I, type II and lateral node dissection using video. The dissection of the posterior aspect should be performed carefully so that it is possible to identify the branches of S3 and S4. An adequate traction is needed so as to expose adequately the pelvic nervous plexus. The dissection is conducted with scissors and diathermia avoiding bleeding to maintain a good operative field.

It is known that 10 to 15% of lower rectal cancers have lateral spread. These numbers rise to 30% when concerning Dukes C patients. In low rectal cancer it is of paramount importance to perform lateral lymphadenectomy with autonomic nerve-preservation.

We have evaluated sexual function. In patients who underwent type I procedure, 91% preserved normal ejaculation. However, in the group in which the superior hypogastric plexus was sacrificed all patients had failure in ejaculation. In patients who underwent bilateral preservation of the pelvic plexus, 82% preserved full erection. Five-year survival rate in patients with lower rectal cancer was 92% for Dukes A, 76% for Dukes B and 54% for Dukes C. Overall local recurrence was 7.5%.

Summarizing, radical surgeries brought better survival rates, but caused increased dysfunction and morbi-mortality, while limited surgeries allowed a better quality of life, but had high local recurrence and poor survival. The nerve sparing technique has found the balance between radicality and function.

## **RADIATION PROCTITIS**

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Radiation proctitis is a well-recognized complication of radiotherapy. The effects of radiation therapy on the bowel can be divided into acute and chronic injury. The usually self-limiting acute injury occurs within 2 to 4 weeks after commencement of therapy. The commonest symptom is diarrhoea as well as abdominal cramps, tenesmus and less commonly rectal bleeding. In contrast, chronic radiation injury consists of significant mucosal and submucosal changes. The cardinal feature is telangiectatic vascular abnormalities which can cause most troublesome bleeding which is the most common symptom. In other parts of the bowel there is ischaemia of the wall causing submucosal fibrosis, crypt distortion and focal mucosal ulceration. The clinical symptoms usually manifest months or years after exposure to radiation.

Whenever a patient comes with rectal bleeding after radiation, it is imperative to differentiate whether it is due to radiation proctitis or recurrent tumour via endoscopy. Prominent telangiectasia, erythema and friability are typical changes here.

Until today, there is no standard treatment for this chronic radiation proctitis. There is a paucity of evidence regarding the optimal medical, endoscopic or surgical management and trials that have been performed tended to be on a small scale. The medical therapies include the use of oral and rectal preparation of steroids, sucralfate, 5-aminosalicylates, and short chain fatty acid enemas. More recently, the use of hyperbaric oxygen has shown some success. However, the more popular methods are formalin dab, laser and argon plasma coagulation. Formalin dab has been quite attractive as it is cheap and easily available with excellent results. Surgical resection is still seen as the last resort in case when everything else has failed in an attempt to save a patient's life.

## **MANAGEMENT OF LOWER GASTROINTESTINAL BLEEDING**

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Acute lower gastrointestinal bleeding is usually defined as bleeding distal to the ligament of Trietz, however, massive haemorrhage from the upper gastrointestinal tract can also present with rectal bleeding. The commonest source of bleeding is the colon in 85% of cases, the upper gastrointestinal tract accounts for 10% of cases while the small bowel for the remainder 5%

The management of these patients depends on the rate of bleeding. The first step is to resuscitate the patient and then decide on a plan of investigations to identify the source of bleeding. Frequently the plan of management is determined by the availability of investigations at the institution. The investigations that are used in the management of rectal bleeding include oesophagogastroduodenoscopy, proctoscopy, colonoscopy and more specialized investigations such as capsule endoscopy, sulphur colloid scintigraphy, use of labeled red cells, angiography and enteroscopy.

Commonly missed conditions include peptic ulcer disease and bleeding haemorrhoids, whilst conditions more likely to be seen in Malaysia include right sided colonic diverticular disease, colorectal cancer, angiodysplasia, dengue haemorrhagic fever and typhoid.

## **TRAINING OF AN AMERICAN COLON AND RECTAL SURGEON**

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The training of an American Colon and Rectal Surgeon has evolved over 100 years. The specialty was founded by Joseph M. Matthews in 1899. The specialty board of colon and rectal surgery was incorporated in 1934. All of our specialty boards are non governmental.

In 1972 there were only 6 training programs in the U.S. graduating 6 colon and rectal surgeons each year. Today, there are 47 programs graduating, 68 colon and rectal surgeons each year for 300 million people in the U.S. and Canada.

The training period is for one year and is preceded by 5 years of general surgery. The trainees must be board eligible in general surgery before starting their specialty year in colon and rectal surgery. Upon successful completion of the Fellowship in colon and rectal surgery, they will sit for a written and oral examination.

The training period consists of an extensive surgical experience in cancer surgery of the large bowel. Inflammatory bowel surgery and all the benign conditions of the ano rectum are also part of the training program. Experience is also obtained in colonoscopy and anorectal physiology.

Since 1989, the American Board of Colon and Rectal Surgery has kept a prospective database of each individual applying for the qualifying examination. There are 17 different categories of procedures that are tabulated. The Board requires a minimum number of cases in 11 of the 17 categories in order to qualify for the examination.

Operations for common anorectal conditions have remained remarkably consistent over the period of the study. Endoscopic procedures have undergone a substantial change over the years. The average number of colonoscopies is 250 for each applicant over a 12 month period.

During the period of study, the most important technical development has been laparoscopic colon surgery. In 2005, 41% of the colon cancer resections were preformed with minimally invasive techniques.

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## WHAT'S HAPPENING DOWN UNDER?

JOE TJANDRA

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In Australia, Colorectal training is regarded as post-fellowship training. The Australian and New Zealand program involves a two-year training program in colorectal surgery. Colorectal fellows will spend a year each in two different institutions in Australia and New Zealand. Some fellows will undertake an additional third year in research and some would complete the second year of training in an accredited post overseas, such as at the Cleveland Clinic, or the St Mark's Hospital.

Selection of Colorectal fellows occurs during the final year of registrar training. Selection is based on references and an interview process. Formal training includes a monthly journal club meeting, a fellows weekend, when the fellows will give presentation on a preselected topic. All fellows are interviewed yearly and there is also an exit examination at the end of the fellowship.

The conjoint committee comprising the colorectal society, the Royal Australasian College of Surgeons, and the Gastrointestinal Society of Australasia provides accreditation for colonoscopy, based on a number of criteria.

Centres that provide training for colorectal fellows are regularly accredited by the Training Board of the Colorectal Society of Australia and New Zealand. Upon completion of training, fellows are eligible to apply to become members of the Colorectal Society of Australia and New Zealand.

Some colorectal surgeons received post-fellowship training in colorectal surgery entirely in overseas centres. Upon return, if the training they receive overseas is regarded as equivalent to those provided by the Colorectal Society, they can also qualify to be members of the Colorectal Society. It is, however, increasingly uncommon for young surgeons to receive post-fellowship training in colorectal surgery entirely overseas.

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## **A STUDY OF COLON AND RECTAL CARCINOMAS IDENTIFIED AT COLONOSCOPY IN THE DIFFERING ETHNIC POPULATIONS ATTENDING HOSPITAL PULAU PINANG**

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In Malaysia, colon and rectal cancer is now the 3rd most common cancer, with differing ethnic incidence being reported in the 2003 national Cancer Registry. In spite of this little epidemiological data is available regarding colorectal cancers in Malaysia – either overall, or at an ethnic subgroup level.

### **OBJECTIVES**

We undertook this study to determine the demographics, prevalence and anatomical site distribution of carcinomas in a cohort of the local population

### **METHODS**

This is a retrospective observational study on consecutive patients who underwent colonoscopy at Hospital Pulau-Pinang from 1 January 2000 to 31 December 2005

### **RESULTS**

Analysis was carried out on 3866 patients who had undergone colonoscopy. A total of 309 patients (8%) with colon and rectal carcinomas were diagnosed. The mean age (+ s.d) of diagnosis for colon and rectal carcinomas was 63.5 + 13.0. Males had a significantly higher incidence of carcinomas when compared to females. Synchronous carcinomas were seen in 3 patients (1%). Age greater than 50 years was found to be significantly associated with carcinomas when compared to the patients without carcinomas ( $p < 0.005$ ). Carcinomas were mainly on the left side of the large intestine with the majority seen in the recto-sigmoid region. A higher prevalence of adenomas and carcinomas was seen in the Chinese patients when compared to the Malay and Indian patients ( $p < 0.05$ ).

### **CONCLUSIONS**

Ethnic difference for the prevalence of carcinomas was demonstrated with the prevalence significantly higher in the Chinese. However, there were no significant differences in anatomical location between races, gender and age groups.

## **A CASE REPORT OF CLEAN SWEEP POLYPECTOMIES IN PEUTZ JEGHERS SYNDROME**

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Peutz-Jeghers syndrome is a disease manifested by a combination of mucocutaneous pigmentation and gastrointestinal (GI) polyposis. The major morbidity results from intussusception, obstruction, and bleeding. Standard surgical management has been to perform repeated laparotomies and enterotomies at the site of palpable polyps. A method of treating Peutz-Jeghers syndrome surgically with combined intraoperative endoscopy is presented. It more accurately removes the cause of the major morbidity associated with the disease and may allow the patient a longer interval between laparotomies.



## **A CASE REPORT OF COLONIC STENTING FOR LEFT SIDED BOWEL OBSTRUCTION**

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Palliative colostomy is still unavoidable in many patients with malignant obstruction of the left colon. Self-expanding metallic stents provides an alternative to surgery as for patients with obstructing colorectal cancer. This report describes transanal self-expanding metal stent (SEMS) placement in patient with left-sided colon obstruction, while awaiting urgent CABG for his cardiac condition. The advantages of SEMS are discussed.

## **ELECTROLYTES CHANGES AFTER BOWEL PREPARATION FOR COLONOSCOPY**

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### **INTRODUCTION**

Bowel preparation is a standard procedure prior to colonoscopy. Incidents of mortality following bowel preparation have been reported. It has been speculated that hypovolemia and electrolytes derangement may be a causative factor. The physiologic effects of such bowel preparation are not well established in our population. Our aim is to investigate the physiologic effects of bowel preparation with fleet phosphosoda in our population.

### **METHOD**

This was a prospective study conducted at a single secondary referral centre between 1st of March 2006 to 31st of October 2006. Universal sampling was done based on inclusion and exclusion criteria. 128 patients were included in this study. Physiological parameters and electrolytes were taken before undergoing bowel preparation and another set taken just before colonoscopy. Data collection and statistical analysis were done using SPSS version 12.

### **RESULT**

Weight loss, Potassium, Phosphate and Urea level were significantly different from pre and post bowel preparation ( $p < 0.05$ ). However there was no clinically symptomatic difference after bowel preparation.

### **CONCLUSION**

Bowel preparation has significant physiologic and electrolytes changes. However these were not clinically associated with significant symptom.

### **KEYWORDS**

bowel preparation, fleet phosphosoda, physiological changes, serum electrolytes

## **FIVE-YEAR REVIEW OF HISTOPATHOLOGICAL FINDINGS OF COLORECTAL CANCER PATIENTS OPERATED IN HOSPITAL TENGGU AMPUAN AFZAN KUANTAN PAHANG MALAYSIA**

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### **PURPOSE**

This review was performed to determine the association between demographic characteristics and the histopathological findings in colorectal cancer (CRC) patients operated in Hospital Tengku Ampuan Afzan (HTAA) Kuantan Pahang Malaysia.

### **METHODS**

We retrospectively reviewed the histopathological reports of 119 CRC cases operated in HTAA from January 2001 to December 2005 which met the inclusion criteria of histologically proven adenocarcinoma. Demographic characteristics which include age, gender, and ethnicity were recorded. The histopathological related variables which include the site of primary tumor, Astler and Collier stage, tumor differentiation and lymph node metastasis were analyzed. Chi square test was used for categorical variables. Data with low expected counts were assessed using Fisher's exact tests.

### **RESULTS**

There were 59 males and 60 females with age ranging from 23 to 93 years. 81.5% of the patients were above 50 years ( $p = 0.038$ ). Malays accounted for 58.8%, followed by Chinese (36.1%) and Indian (5%). The rectosigmoid region and the rectum were the most common sites for the primary tumor (55.6%). Involvement of the rectum is predominantly in the males ( $p = 0.023$ ). The Malays were commonly diagnosed with stage C2 (54.3%) while the Chinese were with stage B2 (58.1%) ( $p = 0.011$ ). Fifty percent of the patients who were less than 50 years old were diagnosed with stage C2 ( $p = 0.024$ ). Sixty percent of female patients demonstrated lymph node metastasis ( $p = 0.044$ ). Significant lymph node metastasis was also observed among Malay patients ( $p = 0.022$ ).

### **CONCLUSION**

The findings from the present review suggest that there are several associations between demographic distribution and histopathological characteristics of CRC. More than fifty per cent of CRC are found in the rectosigmoid region and the rectum. CRC are more commonly found in Malay and rectal cancer is predominantly affecting the male in this study. About forty five percent of patients harbor metastases in the lymph nodes and fifty percent of the younger age group were presenting with nodal metastases.

## THE USE OF PROPOFOL AS SEDATIVE AGENT AGAINST TRAMADOL/MIDAZOLAM AS SEDO-ANALGESIC AGENT IN COLONOSCOPY: AN INITIAL REPORT

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### BACKGROUND

The aim of this study was to assess the efficacy of propofol as sedative agents compared with the usage of tramadol and midazolam as sedo-analgesia for colonoscopy. The following assessments were made; 1) degree of tolerance and satisfaction among patients with regards to both methods of colonoscopic analgesia 2) time needed to reach caecum and post colonoscopy recovery period.

### METHODS

51 patients underwent colonoscopy from 1 October 2006 to 15 Jan 2007. They were randomly assigned to the 2 medication regimen. For the propofol group, an initial intravenous bolus of 0.5mg/kg was given, followed by an intermittent bolus of 10mg (1cc) when necessary. This drug was administered by an Anaesthetist. For tramadol and midazolam group, intravenous tramadol 25mg and midazolam 2mg were given initially and then the dosage was increased depending on the patients reaction towards the procedure. Maximum dose of the drug was administered according to the patients body weight. The colonoscopic time was calculated from the time the instrument was inserted into the anus to the time to reach the caecum. Patient assessments of pain and tolerance were obtained at the time of discharge using visual analog scales of 1 to 5. (1 = no pain and 5 worst pain imaginable).

### RESULTS

51 patients were randomized in this study (20 propofol, 31 tramadol and midazolam). 66.7% of the patients were male and 33.3% were female. Malay patients comprise of 64.7%, Chinese 25.5%, Indian 2% and others 5.9%. Patients in propofol group has significantly higher degree of pain tolerance compared to tramadol/midazolam group ( $P = 0.001$ ). The time to reach the caecum was shorter in the propofol group compared to tramadol/ midazolam group ( $p = 0.047$ ). However there was no difference in the recovery period ( $p = 0.169$ ).

### CONCLUSIONS

Using propofol as sedation in colonoscopy provide better pain tolerance in patients compared to conventional use of tramadol and midazolam. The procedure is faster when propofol is used but there is no difference in terms of the recovery period in both propofol and tramadol/midazolam group.

## **VOLVULUS OF THE TRANSVERSE COLON IN THE EARLY POST NATAL PERIOD: A RARE CAUSE OF INTESTINAL OBSTRUCTION**

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The reported incidence of intestinal obstruction during pregnancy in the literature ranges from 1:1500 to 1:66,000 deliveries. The incidence during early puerperium is unknown. Adhesions are the leading cause of small bowel obstruction in pregnant and nonpregnant populations (55% and 65%, respectively). Intestinal volvulus accounts for 25% of small bowel obstructions in pregnant women, but only 3 – 5% in nonpregnant women. The incidence has been shown to increase with increasing gestation. Obstruction occurs most frequently at times of rapid increases in uterine size (between 16 and 20 weeks, and 32 and 36 weeks). In addition, there is an increase in occurrence during the puerperium because of a sudden decrease in uterine size. Volvulus most often involves the small bowel followed by the cecum and sigmoid colon. The incidence of volvulus of the transverse colon is rare. We will discuss the presentation and management of volvulus in a patient who presented to us with acute intestinal obstruction in early puerperium and was found to have volvulus of the transverse colon.

## **PRIMARY SQUAMOUS CELL CARCINOMA OF THE RECTUM: A CASE REPORT**

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Squamous cell carcinomas of the rectum represent a very rare malignancy. In the literature, the incidence has been reported as 0.25 to 0.1 per 1000 colorectal carcinomas. Due to its rarity, the treatment and behavior of this tumor have only been discussed in case reports. As a result, several theories regarding their pathogenesis have been brought forward. We will describe our experience in managing this rare malignancy in a 69 year old man who presented with altered bowel habit. Though surgery remains the mainstay of treatment, issues regarding adjuvant treatment have been discussed in the literature. The rarity of this tumour also raises issues regarding criteria for diagnosis which we will try to highlight and discuss.

## DIAGNOSTIC YIELD OF COLONOSCOPY IN PATIENTS WITH COLORECTAL SYMPTOMS

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### BACKGROUND AND STUDY AIMS

The factors that determine the yield of colonoscopy in patients with colorectal neoplasm are different. We conducted a prospective study to evaluate the yield of colonoscopy in patients with colorectal symptoms and to determine which symptom(s) has a high positive predictive value in a group of patients undergoing colonoscopy.

### PATIENTS AND METHODS

A total of 360 patients with symptoms of colorectal neoplasm, namely; per rectal bleeding, altered bowel habit and abdominal pain were included in a 10 month period of study. Diagnostic yield was defined as the ratio between significant findings detected during colonoscopy and the total number of procedures performed for that indication.

### RESULTS

In the study, 57 % of patients were male. According to age, there were 65% of patients were more than 50 years of age, 18% were between 40 to 50 years of age and 17% were less than 50 years old. According to the study, 28% of patients posted for colonoscopy had symptoms of per rectal bleeding and 26% of them had symptoms of alteration in bowel habit Among 360 patients who underwent colonoscopy, 55% of patients had positive findings. Among those with positive findings, about 40% had haemorrhoids. Only 13% of them had adenocarcinoma and the remaining had benign polyps.

### CONCLUSION

The diagnostic yields of colonoscopy in patients with single symptom are relatively low but for those with more than one symptom are more likely to obtain positive findings.

## **ANAL SPHINCTER INJURY REPAIR IN A MALAYSIAN TERTIARY REFERRAL HOSPITAL**

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### **BACKGROUND**

Anal sphincter injury (ASI) is not uncommon and significantly affect patients' lifestyle and function. The chief causes of injury are obstetric injuries at childbirth (ASI-O) and direct trauma (ASI-T), particularly due to motor vehicle accidents (MVA).

### **MATERIALS & METHODS**

Fifteen patients were assessed between 1 January 2006 – 31 December 2006 at our Hospital Kuala Lumpur unit. The mean age of patients was 30 years (range 16-43 years). The majority of referrals were external (n=9; 60%). All patients exhibited significantly reduced anal tone at presentation by digital examination. Six patients (40%; four ASI-O and two ASI-T) had formal preoperative anal manometry (AM) and endoanal ultrasound (EAUS) all of whom demonstrated reduced resting tone (range 12 – 25mm Hg) and the site and depth of defects. All but 2 remain on active follow-up. ASI-O: Ten (67%) were females with anterior ASI-O all secondary to their first vaginal deliveries. The 6 late ASI-O had wide variation of duration between onset and referral (range 8 months – 14 years; median 14 months) with only one patient bearing a sigmoid loop colostomy. One had had early attempted repair by her attendant gynaecologist. Two had significant anovaginal fistula (AVF) and two had significant tissue loss with deficient perineum. ASI-T: The five ASI-T were all MVA-related males (mean age 31 years; range 17 – 42 years) bearing loop sigmoid colostomies. The mean duration from injury to referral of late ASI-T patients was 12 months (range 9 – 16 months); two were further handicapped by below knee amputations. The sites of injury were more variable with significant tissue loss in 4 patients.

### **RESULTS**

ASI-O: Four were acute internal referrals and received immediate emergency repair along with trephined sigmoid colostomy; 2 had their stoma reversed after 4 months but the other 2 were lost to follow-up. Five patients received definitive anterior keeled repair with trephined sigmoid colostomy, three had their colostomy closed after 4 months; one had a loop colostomy only. All were advised against having normal deliveries in future pregnancies. ASI-T: Two presented acutely and were immediately repaired along with loop sigmoid colostomies. One died of concomitant polytrauma complications, two had eventual reasonable resting and squeeze tones clinically confirmed on AM and EAUS requiring only stomal closure after 20 and 25 months post-injury; one had definitive repair 18 months post-injury with stomal closure 4 months later despite his amputee status, with the remaining amputee deemed to have irreparable anorectal injury.

Anorectal function appeared satisfactory with little soiling at 3 months in all patients who have had definitive repair and/or stomal closure (n = 8 (53%)).

### **CONCLUSIONS**

ASI-O should be avoided and is best repaired immediately once identified. The results of its repair and subsequent function appeared encouraging in the short term. ASI-T has greater variation of degree of severity of injury and tissue loss. More expectant conservative measures possibly due to fibrotic cicatrization can result in near-normal function without resorting to operative intervention.

## DNA HYPERMETHYLATION OF MULTIPLE GENES IN COLORECTAL CANCER

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DNA hypermethylation at the CpG islands of tumour suppressor genes causes inactivation of gene expression which may lead to carcinogenesis. The aim of this study was to establish the methylation profile of five CpG islands which might play aetiological roles in colorectal carcinogenesis. Candidate gene approach was used in our study. Primary cancer (CA) and the corresponding adjacent normal mucosal ('non-tumour' NT) tissues from 28 colorectal cancer patients were used. DNA was first extracted from the tissue samples and subsequently modified with sodium bisulfite. Methylation Specific PCR (MSP) was performed to analyse the methylation status of the CpG island promoter regions of five genes. All the genes tested were hypermethylated in CA and NT tissues in varying degrees except for APC which was found to be hypermethylated in CA tissues only. The methylation frequencies of *APC*, *cyclin D2*, *E-cadherin*, *DAPK*, and *HIN-1* genes were 32.1% (9/28), 17.9% (5/28), 89.3% (25/28), 35.7% (10/26), and 60.7% (17/28) for CA tissues respectively, whereas the frequencies were 0% (0/28), 3.6% (1/28), 89.3% (25/28), 50% (14/26), and 28.6% (8/28) for NT tissues. The hypermethylation differences for the APC gene suggest for it to be cancer specific and occurs at a later stage in colorectal carcinogenesis, while aberrant methylation of *cyclin D2*, *E-cadherin*, *DAPK*, and *HIN1* genes may occur at the pre-cancerous stage and could be useful for early detection of colorectal cancer.

## QUALITY OF LIFE ASSESSMENT IN MALAYSIAN OSTOMATES

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### OBJECTIVE

Patients with gastrointestinal stomas bear significant physical, psychological, social and sexual handicap. There is scant literature on the impact of the stoma on Malaysian patients, including its effect on Muslims. The aim of this study is to assess the quality of life in patients with stomata. The impact of living with stoma in the Muslim population was also analyzed.

### METHODS

In a prospective study, stoma patients from a single tertiary colorectal referral centre were interviewed using validated EORTC (European Organization for Research and Treatment of Cancer) health questionnaires QLQ-C30 for general quality of life, and colorectal-specific QLQ-CR 38, at least three months following surgery. Additional pre tested questions pertaining to prayer issues were added for Muslim patients. Data analysis was performed with the use of a statistical programme (SPSS Version 13).

### RESULTS

Eighty-five stoma patients were interviewed between March until December 2005. Only ten to thirteen percent of patients in the study group reported severe functional score in the cognitive, emotional and

social domains. The patterns of responses in the study group were similar to the reference values quoted for European colorectal patients in the cognitive and emotional scores. However, there were notable differences in the social and financial scores. Only thirteen percent (n = 11) of patients in the study group scored severely in the social domain. This is in contrast to twenty one percent in the European colorectal patients. Furthermore, forty-seven percent (n = 40) reported dire financial handicap. This is very much in contrast to the reference data in the European colorectal population where financial concerns are less overwhelming – only nine percent reported severe financial handicap. Forty-two percent (n=22) of men had physical sexual deficiencies whilst ninety-one percent (n = 29) of women abstained from sex altogether. Nine percent (n=8) found life with stoma severely restricting. Fifty-six percent (n = 32) Muslims felt the presence of stoma to be incompatible with their daily prayers.

## CONCLUSION

The presence of a stoma has a profound impact on the quality of life of its recipients, as well as being financially burdensome. Compared to the European colorectal population, the study population scored more severely in the social and financial domains. Stoma-bearing Muslim patients should undergo rigorous counseling addressing religious issues.

## POSTER 13

### **PILONIDAL SINUS: KARYDAKIS FLAP EXPERIENCE IN HOSPITAL TUANKU JA`AFAR, SEREMBAN**

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## INTRODUCTION

Pilonidal sinus is uncommon in Malaysia: due to its rarity treatment varies greatly from wide local excision with either left the wound to granulate by itself or delayed primary closure. This method will leave behind a big wound and prolong healing and significant morbidity.

## MATERIALS AND METHODS

Review all patients who underwent Karydakis flap operation for pilonidal sinus between Jun, 2005 and Jun, 2006.

We recently started wide local excision of sinus and primary closure with Karydakis flap; we did this procedure to 4 patients. All were cured by this procedure. One patient developed wound infection and cure with a course of antibiotic.

## CONCLUSION

With our limited experience, Karydakis flap is a good method of treating this condition with low recurrence even for low volume center



## **COLORECTAL CANCER DEMOGRAPHICS AND MANAGEMENT IN A MALAYSIAN TERTIARY REFERRAL CENTRE - PROSPECTIVE AUDIT OF A THREE YEAR PERIOD 2004 - 2006**

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### **BACKGROUND**

Colorectal cancer (CRC) is the commonest gastrointestinal cancer and the third commonest cancer in Malaysian patients. There is relative paucity of local data on demographics, presentation, subsequent management, complications and outcome including consequences of neoadjuvant therapy (NAT) for patients with advanced rectal cancer.

### **MATERIALS & METHODS**

This is a prospective colorectal cancer database for patients presenting to our colorectal unit in Hospital Kuala Lumpur from January 2004 to December 2006. Relevant data was collected using a standardised pre-tested proforma. All data were analysed using SPSS ver.13.

### **RESULTS**

A total of 204 patients were accrued. Fifty six percent (n=114) of patients were males. The mean age at presentation for males and females were similar (61.5(±11.8) vs 60.8±11.9 years respectively). The majority of patients were in the 60-69 years age group (36%). The majority of patients were Chinese (44%) followed by Malays (37%). The mean age at presentation for Malays was relatively younger at 57.2(±13.6) years (range 26-77 years) with one-way ANOVA being significant for the age at diagnosis and the Malay race (p<0.05). Family history of CRC was noted in 7% (n=14). Left-sided tumours predominate (87%), the commonest site being rectum (41%), rectosigmoid (31%) and sigmoid (12%) with right-sided caecal-hepatic flexure cancers together comprising 11% cases only. In patients with rectal adenocarcinoma, 41(20% overall or 49% of rectal cancers) were clinically assessed to be fixed (T3 or greater) while three had mobile low cancers. All 44 patients were referred for neoadjuvant preoperative chemoradiotherapy (NAT). The majority of patients (n=168;82%) did not reveal distant metastases. The association between preoperative CEA levels and occurrence of distant metastases was significant ( $\chi^2 = 4.06$ ; p<0.05). The most common operations performed were anterior resection (AR) (n = 82; 40%) followed by right hemicolectomy (n = 24; 12%). Thirty two cases (16%) were performed as emergencies primarily for acute abdomen or acute obstruction. The 30-day mortality for all cases were 2% (n = 5). The commonest postoperative complications were wound infections (n = 25;12%) and pulmonary-related postoperative pyrexia (12%). Although NAT was seen to increase the rate of days of hospital stay and rate of postoperative wound breakdown, there were no significant differences between NAT and the days of post-operative stay. ( $\chi^2 = 0.43$ ; df = 1; p>0.05) and between NAT and complications. (Fisher's Exact p > 0.05). The most frequent histopathological stage were Astler-Coller B2 (41%) followed by C2 (20%) and B1 (16%). Only three patients had stage A cancer. Ninety four patients (46%) received adjuvant therapy with either chemotherapy or radiotherapy or both. Four patients (2%) developed aggressive cancer refractory to NAT and thus were not offered surgery.

### **RESULTS**

The overall age at presentation, morbidity, mortality and distribution of histopathological stage were comparable to published data. NAT did not seem to significantly affect subsequent operative management or influence length of hospital stay and complications.