# Advanced Coloproctology Course

## Course Programme
## 13th- 14th May 2021

The Association of Coloproctology
of Great Britain and Ireland

# *Welcome*

A very warm welcome to the 2021 Advanced Coloproctology course, the flagship educational course of the ACPGBI. This course has been running very successfully for nearly 30 years. It has the underlying ethos of delivering a concise summary of key colorectal topics for the final FRCS as well as practical tips and updates of clinical issues the consultant meets on a day to day basis. This provides the consultant with a concise method of maintaining and improving their own clinical practice. The proven format includes short presentations by an experienced faculty. In addition, there is generous allocated time for each group of presentations to be discussed on a practical basis and for the audience to engage and ask the speakers questions. A recurring component is the opportunity for the trainees in the audience to participate in mock vivas with real time feedback.

A further significant component of the course is the opportunity to meet and network with the faculty and other attendees in a relaxed and friendly environment. Due to the current restrictions, we have altered this component this year and moved to a more virtual format. Whilst a digital learning experience does not compensation for the lack of professional contact and informal problem sharing, we hope that this format will be engaging, inclusive and wide reaching. The use of a studio allows real time presentations and live panel discussion. Technology will mean that it is in many ways easier to quiz the panel. More time has been set aside for these valuable panel discussions and it is still possible to do the mock vivas which will inevitably increase value of the experience. Finally, even after the course has finished, content will continue to be available to those members who have registered.

This new format does have the additional advantage of opening the course up to a larger audience. We hope that those who join who have never attended before will appreciate the quality and value of what we will present and consider attending in the future when we may be able to return to a more face to face environment.We are very grateful for the support from our industry sponsors and The Pelvic Floor Society. Technology again allows easy ways to interact with these sponsors and I strongly urge you to show your appreciation by engaging with as many as you can, both during the course and after.

With best wishes for an exciting course and valuable learning experience.

**Steve Brown**

President, Association of Coloproctology of Great Britain and Ireland

# *Sponsors*

ETHICON

PART OF THE Johnson & Johnson FAMILY OF COMPANIES

Shaping the future of surgery

From creating the first sutures, to revolutionizing surgery with minimally invasive procedures, Ethicon has made significant contributions to surgery for nearly 60 years. Our continuing dedication to Shape the Future of Surgery is built on our commitment to help address the world's most pressing health care issues, and improve and save more lives.

INTUITIVE

At Intuitive, innovating for minimally invasive care is the passion that drives us. Our robotic-assisted da Vinci Surgical System helps empower doctors and hospitals to make surgery less invasive than an open approach.

# *Sponsors*

The excellent-quality images of BK Medical ultrasound systems give you information that helps you plan treatment and confirm results. Real-time ultrasound imaging helps colorectal surgeons visualize anatomy, plan treatment, and evaluate outcomes for pelvic floor and anorectal conditions. The bkSpecto ultrasound system offers high-resolution images, a touch-based workflow, and a custom-fit clinical design. The bk3000 ultrasound system gives you enhanced visualization with high spatial, temporal, and contrast resolution. Our specialized and sterilizable endocavity 3D and anorectal transducers allow you to acquire 3D images and datasets and see structural details from different angles, and the compact transperineal transducer has a small footprint for transperineal and translabial exams.

H&R Healthcare Ltd is a UK based distributor with over 12 years' experience supplying innovative and cost-effective medical products to the NHS.

We are proud to represent a variety of Biodesign® products, which are non cross-linked, non-dermis biologic grafts that are completely remodelled into strong, vascularised patient tissue.

A family owned company with a portfolio of reusable instruments, encompassing EPSiT, VAAFT, Transanal surgery and 3D/4K fluorescence technology, KARL STORZ strive to satisfy both the sustainability and environmental goals of its customers. Please follow our links to see what we have to offer you in training and technology.

# *Sponsors*

Medtronic
Further, Together

As a global leader in medical technology, services and solutions, Medtronic improves the lives and health of millions of people each year. We use our deep clinical, therapeutic and economic expertise to address the complex challenges faced by healthcare systems today.

NORGINE

Norgine is a leading European specialist pharmaceutical company that has been bringing transformative medicines to patients for over a century.

Date of preparation: April 2021 UKE-COR-NP-2100051

THD

Our vision is leading coloproctology with advanced and minimally-invasive healthcare solutions for the diagnosis and treatment of colorectal disorders. Our mission is to globally improve healthcare standards for the diagnosis and treatment of colorectal diseases through constant technological advances and scientific research.

*Special thanks to the ACC course committee and faculty who have worked incredibly hard to ensure a fabulous educational event.*

Laura Hancock
Nicola Eardley
Jim Tiernan
Tamzin Cuming
Katherine Grant
Susan Moug
Jordan Fletcher
Athur Harikrishnan

# Thursday 13th May 2021

08:00 - 09:00 VIVA Workshop - Chris Macklin/ Graham Williams/ Tamzin Cuming Athur Harikrishnan/ Nick Lees/ Katherine Grant/ Arnab Bhowmick/ Laura Hancock

09:15 Welcome from Steve Brown, President ACPGBI and Laura Hancock, Chair, Education and Training

## Proctology

Chaired by: Graham Williams and James Wheeler

09:30 Pilonidal sinus disease - Asha Senapati
09:45 Horseshoe anal fistulae - Phil Tozer
10:00 Chronic anal pain - Charles Knowles
10:15 Premalignant anal skin conditions - Tamzin Cuming
10:30 Discussion & Cases

## Sponsored Engagement Break

11:00 Safety in the OR: A case for Smoke Evacuation - Amy Peters



## Emergencies

Chaired by: Pete Sagar and Nicola Fearnhead

11:30 Sigmoid volvulus - Sarah Duff
11:45 Strangulated incisional hernias - Neil Smart
12:00 Diverticulitis - Dale Vimalachandran
12:15 Abdominal wall closure techniques in emergency setting - Andy Miller
12:30 Discussion & Cases

13:00 Lunch

## IBD

Chaired by: Steve Brown and Laura Hancock

14:00 Avoiding septic catastrophe in IBD - Nicola Eardley
14:15 Preventing recurrence in Crohn's disease - Janindra Warusavitarne
14:30 Dysplasia and risk in colitis - Tom Pinkney
14:45 Decision making after STC - Justin Davies
15:00 Discussion & Cases

## Sponsored Engagement Break

15:30 Enseal X1 - Behind the Design - John Brady



## Perioperative care

Chaired by: Sarah Duff and Jared Torkington

16:00 Pre-operative shared decision making - Susan Moug
16:15 Organ support in critical care - Patrick MacGoey
16:30 Management of high output stomas and fistulas - Jonathan Epstein
16:45 Perioperative bleeding - Austin Acheson
17:00 Discussion & Cases

17:30 - 18:00 **State of the Art Lecture** - Life Hacks for Research - Steve Brown

# Friday 14th May 2021

| | |
|---|---|
| 08:00 -09:00 | VIVA Workshop - Chris Macklin/ Graham Williams/ Tamzin Cuming Athur Harikrishnan/ Nick Lees/ Katherine Grant/ Arnab Bhowmick/ Laura Hancock |
| 09:15 | Welcome back |

## Pelvic Floor

Chaired by: Karen Telford and Charles Knowles

| | |
|---|---|
| 09:30 | Making the assessment - Julie Cornish |
| 09:45 | Best medical management strategies - Sushil Maslekar |
| 10:00 | Managing acute obstetric injuries - Jennie Grainger |
| 10:15 | Surgical options for rectal prolapse - Jonathan Randall |
| 10:30 | Discussion & Cases |

## Sponsored Engagement Break

| | |
|---|---|
| 11:00 | Ethicon Digital Innovation - Ben Griffiths and Laura Hancock |

## Colonoscopy

Chaired by: Susan Moug and Charles Maxwell-Armstrong

| | |
|---|---|
| 11:30 | Where does FIT fit in? - Sarah Mills |
| 11:45 | Polypectomy - James Wheeler |
| 12:00 | Management of complex rectal polyps - Amyn Haji |
| 12:15 | FAP and desmoids - Sue Clark |
| 12:30 | Discussion & Cases |
| 13:00 | Lunch |

## Cancer

Chaired by: Nicola Fearnhead and Neil Smart

| | |
|---|---|
| 14:00 | Excising nodes - can we improve outcomes? - Ian Jenkins |
| 14:15 | The coloanal anastomosis - Jim Tiernan |
| 14:30 | Molecular sub-types in colorectal cancer: implications for patient care - Jenny Seligmann |
| 14:45 | Surveillance of complete response - Jared Torkington |
| 15:00 | Discussion & Cases |
| 15:30 | Course round-up |

# *Table of Contents*

*(clickable links)*

# *Table of Contents*

*(clickable links)*

# Pilonidal Sinus Disease

**Asha Senapati**

Consultant Colorectal Surgeon & Past President, ACPGBI

St Marks Hospital & Queen Alexandra Hospital

Pilonidal disease effects 26/100,000 people, more commonly in men. It has an uncertain but acquired aetiology.

There are many treatments, implying that none are perfect. Asymmetric wounds are more likely to be successful, with a quicker healing time and a lower recurrence rate.

Bascom described a technique for simple disease with good results in which the midline pits are excised and a lateral drainage incision made. Secondary healing then occurs. Other procedures for simple disease such as the Trephine, Fibrin glue and EPSiT may be used, with similar results.

Extensive pilonidal disease or recurrence are difficult to treat by simple procedures. Karydakis operation and flaps such as the Limberg flap, rhomboid flap and Z plasty also have good results, but are extensive operations.

The Cleft Closure/Lift, also described by Bascom, can be used instead. It has an asymmetric closure, is simple and can be done under local anaesthesia (with IV sedation) as a day case.

In treating pilonidal disease, the operations should be simple, as patients seem to outgrow this condition. Failure of some treatments may result in a greater morbidity than the primary disease. Recurrence rates ideally should be under 10%. Procedures that can be done under local anaesthesia as a day case are preferable.

**References:**

1. Allen-Mersch TG. Pilonidal sinus: finding the right track for treatment. *Br J Surg 1990*; 77: 123-32.

2. Petersen S et al. Primary closure techniques in chronic pilonidal sinus. A survey of the results of different surgical approaches. *Dis Col Rectum 2002*; 45: 1458-67.

3. Karydakis GE. Easy and successful treatment of pilonidal sinus after explanation of its causative process. *Aust NZJ Surg 1992*; 62: 385-9.

4. Bascom J. Pilonidal disease: long term results of follicle removal. *Dis Colon Rectum 1983*: 26: 800-7.

5. Senapati A, Cripps NPJ, Thompson MR. Bascom's operation in the day-surgical management of symptomatic pilonidal sinus. *Br J Surg 2000*; 87: 1067-70.

6. Gips M, Melki Y, Salem L, Weil R, Sulkes J. Minimal surgery for pilonidal disease using trephines. *Dis Colon Rectum 2008*: 51: 1656-63.

7. Di Castro A, Guerra F, Sandri G, Ettire GM. Minimally invasive surgery for the treatment of pilonidal disease. The Gips procedure on 2347 patients. *Int J of Surgery 2016*; 36: 201-205.

8. Senapati A, Cripps NPJ, Flashman K, Thomspon MR. Cleft closure for the treatment of pilonidal disease. *Colorectal Disease 2011*; 13: 333-6.

9. Meinero P, Mori L, Gasoli G. Endoscopic pilonidal sinus (EPSiT). *Tech Coloproctol 2014;* 18: 389-92.

# Horseshoe anal fistulae

**Phil Tozer**

General and Colorectal Surgeon

St Marks' Hospital

Horseshoe anal fistula are a complex morphology and can be very challenging to treat. The presence of a horseshoe prevents most sphincter preserving procedures and can drive substantial symptomatology. Fistula complexity, including horseshoes, are best assessed with imaging and MRI remains the gold standard. Clinical features include multiple external openings, and induration which might be palpable within the anal canal, at the anorectal junction or above the sphincter complex. Any suggestion of complexity should prompt imaging and this will help identify the horseshoe and clarify its anatomy.

Pararectal horseshoes may be laid open internally without a risk to continence, unless there is an associated IS or ES fistula, but may bleed as the full thickness of the rectal wall is incised. Jawed energy devices are useful. Associated fistula may be controlled with a seton whilst the laid open horseshoe heals, and SPPs may then be appropriate.

Intersphincteric horseshoes can be laid open from the anal verge if low, or through the internal sphincter if higher, but the latter carries the risk of minor continence impairment and represents a point of no return. If low, laying open an associated fistula gives access to the horseshoe which can be laid open within the wound.

Ischioanal fossa horseshoes can be laid open without damaging muscle but may leave a substantial wound. An associated transsphincteric fistula can be controlled with a seton in the first instance and will then be suitable for a SPP. A LIFT may be suitable, for example.

More complex tracts need careful assessment and management, with a clear plan for when muscle is cut, and what the aim of horseshoe management and the plan for the post-rationalisation fistula are. Options include laying open, loose seton control and rationalisation followed by sphincter preserving procedures aimed at repair – patient goals and choice are crucial and will be central to decision making.

Less invasive options such as the modified Hanley procedure, PERFACT, dVAAFT and the sphincter preserving procedures such as cVAAFT and FiLaC are reported but evidence is limited.

# Chronic Anal Pain

**Charles Knowles**

Professor of Surgery

Queen Mary University

The talk provides a logical approach to managing patients who often invoke anxiety from colorectal surgeons who may feel some degree of impotence in their management. This need not be so. Armed with a clear understanding of the causes of chronic anal and perineal pain, which can conveniently be divided into three groups of three main diagnoses each (table), it is possible to build a logical algorithm of investigation and treatment.

*Table 1*

| 3 classes | 3 main diagnoses | Aetiology | Causal relationship | Epidemiology |
|---|---|---|---|---|
| Local anorectal conditions | • Fissure<br>• Fistula<br>• Other | Local inflammation, fissue, piles, fistula, tumour etc. | Usually evident | Very common |
| Functional ano-rectal pain syndro-mes | • Proctalgia fugax<br>• Levator ani syndrome<br>• Unpsecified | Neuromuscular – peripheral and central (psychoso-matic) | Weak – poorly understood | Uncommon |
| Chronic perineal pain syndromes with some structural basis | • Coccygodynia<br>• Pudendal neuralgia<br>• Neuropathic pain syndromes | Chronic, mostly neuropathic pain | Controversial | Rare |

The key starting point is an adequate history and examination sufficient to guide diagnosis. This must therefore include a pain history and direct questions for symptoms that might indicate associated diagnoses. Examination must include the usual search for the obvious (fissure and fistula etc.) but also for specific findings such as levator tenderness (and on occasions for neurological signs or coccygeal instability). In the most part, little more is required to initiate treatment although investigations may be required if obvious pathology is found e.g. MRI for perianal sepsis or findings of a mass (endoluminal investigation if there is PR bleeding). The most common 'tricky' diagnosis is levator ani syndrome (variably described also as levator spasm and pelvic floor myofascial pain). Here the history is often characteristic – onset is associated feeling something snap during a certain posture or exercise and subsequent pain is associated with posture and/or movement. The pain is reproduced by palpating the levator muscle (commonly the left). Such patients should be referred to a specialist pelvic floor physiotherapist wo will manage the problem with some form of myofascial release + adjucts (such as the Wise-Anderson protocol). Other causes are less common and, in general, warrant specialist referral.

# Premalignant Anal Skin Conditions

**Tamzin Cuming**

Colorectal Surgeon

Homerton University Hospital NHS Foundation Trust

Anal intraepithelial neoplasia (AIN) is a precursor lesion to anal squamous cell carcinoma (SCC). It is found in the squamous epithelium of the anal canal at the squamocolumnar junction and distally to the anal verge and onto the perianus. The vast majority of lesions are caused by the human papilloma virus (HPV) however not all HPV related lesions are premalignant. HPV can cause a proliferative infection - either seen as warts or flat, coming back as low grade intraepithelial lesion (LSIL) or AIN 1 from the pathologist. Only if HPV - in particular types 16 and 18 - has caused an oncologic transformation of the infected epithelium is the condition truly premalignant. This is a high grade squamous intraepithelial lesion (HSIL), AIN 2 or 3.

The rate of HSIL transformation to SCC is approximately 10% at 10 years (range 5-20%) and is influenced by smoking, HIV, therapeutic and transplant-related immune suppression. Anal HPV carriage is surprisingly common.

Anal and perianal HSIL can be treated to prevent anal SCC - however the case for this is not proven. Topical immune stimulants and topical chemotherapeutic agents have been used along with ablation and less frequently these days, excision.

Intraepithelial adenocarcinoma, extra-mammary Paget's disease is even rarer than AIN and an underlying adenocarcinoma must be sought, but in some it is primary. 20% progress to invasive disease with poor prognosis unless fully excised.

Lichen sclerosis and lichen planus are premalignant skin conditions but are rare in the perianal setting.

# Sigmoid Volvulus

**Sarah Duff**

Consultant Colorectal Surgeon

Manchester University Hospital NHS Foundation Trust

Learning points for sigmoid volvulus:

- Accounts for about 1000 emergency laparotomies/year in the UK
- Cross-sectional imaging is the most accurate diagnostic tool
- Endoscopic decompression has a success rate of >85%
- Recurrence rates are high, at least 2/3
- Proactive, shared decision making and a definitive management plan should be made on the index admission
- Emergency resection has a 3x higher mortality than elective resection
- Elective resection and primary anastomosis is a good strategy
- The evidence for PEC is poor but it is a possible option for a select, well-counselled few
- Good quality research is needed, and is in development

Sigmoid volvulus is the cause of around 1000 emergency laparotomies/year in the UK (NELA audits, 2nd-4th audits, 3.3-4.4% emergency laparotomies), with a 90 day mortality of at least 10%. The literature relating to sigmoid volvulus is mainly level 4, consisting of case reports and case series.

Geographically, there is huge variation in incidence with a ‘volvulus belt’ described in South America, Africa and some parts of the middle East. In endemic areas, patients effected are younger with a more marked male predominance. In sporadic Western areas, patients tend to be older with multiple comorbidities. Risk factors include constipation, colonic dysmotility, diet and altitude, a role for colonic neuropathy has been suggested but it is not clear if this is cause of effect.

Presenting symptoms are usually abdominal pain, distension and obstipation. Signs are abdominal tenderness, distension and an empty rectum. Cross-sectional imaging is the most accurate imaging modality.

After diagnosis, management depends on whether the patient has peritonitis (5-17% in Western series) and is fit for surgery. In the absence of peritonitis, early endoscopic decompression has a success rate of >85%. Recurrence rates after decompression are high so a definitive management plan should be created after multi-disciplinary team review and discussion. This approach is endorsed by the ACGPBI emergency surgery guidelines. The ASCRS CPG suggests that sigmoid colectomy should be considered on the index admission to prevent recurrence.

Emergency surgery has a mortality rate at least 3x that of elective resection, so optimisation and elective sigmoid colectomy is the optimal approach for those fit enough to have surgery. A resection and primary anastomosis has been shown to be safe.

For frail, unfit patients with recurrent sigmoid volvulus a PEC (percutaneous endoscopic colostomy) is a possibility. However, the literature is very limited with only 81 cases included in a recent systematic review (despite the procedure first being described in 1998 for volvulus), it has not been widely adopted or implemented and has a mortality rate of 5-10% and morbidity rates of at least 25%.

# Strangulated Incisional Hernias

**Neil Smart**

Royal Devon & Exeter hospital

Incisional hernias are common and problems such as incarceration and strangulation are now one of the top 10 reasons why patients undergo emergency laparotomy in the NHS according to NELA.

The index surgery that led to the incisional hernia is most often previous colorectal surgery. Patients who have a strangulate incisional hernia have a very high rate of morbidity and mortality. The goals of surgery for strangulated incisional hernia are therefore survival in the first instance, followed by considerations relating to the minimisation of complications, ensuring gastrointestinal continuity and optimising quality of life.

Definitive hernia repair is often not a priority in the emergency setting. The most important consideration from a hernia specific perspective is to ensure that future options for definitive repair are not compromised by attempts at heroic reconstructions in a setting where there are many adverse features.

Patients who have a strangulated incisional hernia should be managed according to the principles that we know reduce mortality and which are advocated in numerous guidelines and NELA, namely early treatment of sepsis with iv antibiotics and iv fluids, early CT scan and assessment by a senior surgeon, theatre within 6 hours and admission to ICU postoperatively.

Intraoperatively, most patients have significant contamination and reconstruction of the abdominal wall with synthetic measures is contraindicated. The evidence for the use of either biologic or bioabsorbable measures in this context is of low quality and is not recommended. If the abdominal wall can be closed primarily, the optimal technique for most patients will be to have a primary sutured closure. The best suture technique or suture type is unknown. Definitive repair of recurrent incisional hernia can be carried out at a later time once the patient has recovered from emergency surgery and their co-morbidity and risk factors have been optimised. If primary closure is not possible due to gross contamination or significant loss of domain then a laparostomy may be required with NPWT and mesh mediated fascial traction.

A bridging repair with rapidly absorbable synthetic mesh material (e.g. polyglactin 910) with skin closure to give a planned ventral hernia is a safe option and does not adversely impact future surgical options for those patients for whom definitive repair can be undertaken once they are well.

In conclusion, for patients with strangulated incisional hernias, the focus should be on saving the patient's life, reducing morbidity and ensuring gastrointestinal continuity where feasible. The use of expensive meshes and complex reconstructive techniques in the emergency setting is strongly discouraged. Definitive hernia repair should be considered an elective procedure performed for a patient whose health had been optimised.

# Acute Diverticulitus

**Dale Vimalachandran**

Consultant Colorectal Surgeon

Countess of Chester Hospital

**Background**

Diverticular disease is a common problem affecting up to 65% of people aged over 80 [1]. Complications may affect 10-25% of these patients [2], and although some such as bleeding and inflammation can usually be managed conservatively, others such as perforation are more serious. Perforation may present as peritonitis requiring urgent surgery but can also occur in a more indolent fashion becoming sealed off, resulting in abscess formation.

The incidence of acute diverticulitis and hospital admissions for its complications are steadily increasing, not least due to a population cohort that exhibits the main risk factors for complicated diverticular disease (age and obesity). UK admission rates for acute diverticulitis increased from 0.56 to 1.20/1000/year between 1996 and 2006 along with a 2.28-fold increase in admissions for perforated disease, equating to approximately 12,000 emergency bowel resections/year [3].

Perforated disease has an associated short (8.2%) [4] and long-term mortality rate (14.5%) [4,5], and these rates are particularly high in the UK. The exact cost to the NHS of this disease is unknown, but European and US studies have suggested direct and indirect costs range from £63 million to over £1 billion/year, respectively [6,7].

The broad initial management strategies for acute diverticulitis (AD) can vary from conservative strategies such as antibiotics and drainage procedures, through to more invasive surgical procedures such as laparoscopic lavage and bowel resection. Although there are a number of prospective studies advocating optimal treatment strategies, little is known about true clinical practice. Retrospective analysis of administrative dataset has suggested that there exists significant international variability in the index management of acute diverticulitis, and that such differences may contribute to the observed differences in mortality rates [4].

The ACPGBI have recently published guidelines on the management of emergency patients, and the reader is strongly advised to review this excellent paper [8].

**Aims of presentation**

There are a number of controversial/debatable areas in the management of acute diverticulitis and this presentation will discuss a selection of these:

1. Ambulatory management of AD
2. Role of antibiotics in uncomplicated AD
3. Role of percutaneous drainage
4. Role of laparoscopic lavage
5. Follow up after AD
6. Role of elective surgery

1. **Ambulatory management**

Many patients with uncomplicated AD can be managed on an ambulatory basis, selected complicated AD eg. small peri-colic abscesses may also be managed in an ambulatory fashion. Careful selection is the key, risk factors for failure of ambulatory management include the presence of extraluminal air, and previous attacks of AD. The failure rate of ambulatory management is quoted at around 6%.

2. **Role of antibiotics**

It is well recognised that AD probably sits on a spectrum of IBD and as such uncomplicated AD is thought in some cases to be a sterile, inflammatory process that may be managed without antibiotics. Two multicentre RCT's comparing routine antibiotics with no antibiotic therapy in uncomplicated AD revealed that overall complication, recurrence and readmission rates were not significantly different between the two groups, with the no antibiotic group having significantly shorter length of stay. Long-term (11-year) follow up of the AVOS study has confirmed that this finding holds true in the long term [9].

3. **Role of percutaneous drainage**

It is generally accepted that most abscesses less than 4cm may be managed with IV antibiotics alone. Larger abscesses >4cm should probably be treated by percutaneous drainage, although there are little prospective data to support this practice. Pooled analysis of retrospective series suggest that the failure rate of percutaneous drainage may be as high as 21% [10]. There may be a cohort of patients who benefit from elective surgical resection, however no high quality data exist to define this group as yet.

4. **Laparoscopic lavage**

The debate regarding laparoscopic lavage has now largely settled following a number of randomised trials that showed whilst feasible and associated with a lower stoma rate, the rate of re-intervention and morbidity was unacceptably high [11]. There still remains a potential role in frail patients who are unfit for major surgery, however they should be appropriately counselled as to the failure rates of this approach.

5. **Follow up after AD**

Two principal questions are often asked after an attack of AD: which patients need colonic imaging and what is the risk of subsequent attacks. A great deal of work has been done looking at the first question, with recent reviews confirming that the risk of malignancy in uncomplicated AD is 1.9% increasing to 10.9% in complicated disease [12]. Recent guidelines would recommend luminal imaging only following a complicated attack and that this can be either via colonoscopy or CT colonography. Risk of subsequent attacks following non-operative management is again more difficult due to the lack of prospective data, however young age, immunosuppression may be predictors of recurrent attacks [13].

6. **Role of elective surgery**

There are likely to be a cohort of patients who may benefit from elective surgery, given the medical, qualitative and economic burden of recurrent diverticulitis. The DIRECT study attempted to answer this question, randomising patients with recurrent symptoms to elective surgery or ongoing conservative management [14]. Whilst surgery was associated with improved quality of life and economic benefits, the study failed to reach its recruitment target and the longer-term results failed to demonstrate a significant benefit. The recently launched US COSMID study is attempting to answer the same question however, may face similar clinical and patient equipoise issues.

**References:**


1. Munie ST, Nalamati SPM . Clin Colon Rectal Surg. *Epidemiology and Pathophysiology of Diverticular Disease*. *2018* Jul; 31(4):209-213.

2. L.B. Ferzoco, V. Raptopoulos, W. Silen. Acute diverticulitis. *N. Engl. J. Med*., 338 1998 1521-1526.

3. Jeyarajah S, Faiz O, Bottle A, Aylin P, Bjarnason I, Tekkis PP, Papagrigoriadis S. Diverticular disease hospital admissions are increasing, with poor outcomes in the elderly and emergency admissions. *Aliment Pharmacol Ther*. *2009* Dec 1; 30(11-12):1171-82.

4. Hong MKY, Skandarajah AR, Higgins RD, Faiz OD, Hayes IP. World J Surg. International Variation in Emergency Operation Rates for Acute Diverticulitis: *Insights into Healthcare Value*. *2017* Aug;41(8): 2121-2127.

5. Gregersen R, Andresen K, Burcharth J, Pommergaard HC, Rosenberg J. Long-term mortality and recurrence in patients treated for colonic diverticulitis with abscess formation: a nationwide register-based cohort study. *Int J Colorectal Dis. 2018* Apr;33(4):431-440.

6. Mennini FS, Sciattella P, Marcellusic A et al. Economic burden of diverticular disease: An observational analysis based on real world data from an Italian region. *Dig Liver Dis*. *2017* Sep; (49):1003-1008.

7. Reddy VB, Longo WE. The burden of diverticular disease on patients and healthcare systems. *Gastroenterol Hepatol 2013* Jan (9):21-27

8. Miller AS, Boyce K, Box B, Clarke MD, Duff SE, Foley NM, Guy RJ, Massey LH, Ramsay G, Slade DAJ, Stephenson JA, Tozer PJ, Wright D. The Association of Coloproctology of Great Britain and Ireland consensus guidelines in emergency colorectal surgery. *Colorectal Dis*. *2021* Feb;23(2):476-547. doi: 10.1111/codi.15503. PMID: 33470518.

9. Isacson D, Smedh K, Nikberg M, Chabok A. Long-term follow-up of the AVOD randomized trial of antibiotic avoidance in uncomplicated diverticulitis. *Br J Surg. 2019* Oct;106(11):1542-1548. doi: 10.1002/bjs.11239. Epub 2019 Aug 6. PMID: 31386199.

10. Fowler H, Gachabayov M, Vimalachandran D, Clifford R, Orangio GR, Bergamaschi R. Failure of nonoperative management in patients with acute diverticulitis complicated by abscess: a systematic review. *Int J Colorectal Dis*. *2021* Mar 7.

11. Ceresoli M, Coccolini F, Montori G, Catena F, Sartelli M, Ansaloni L. Laparoscopic lavage versus resection in perforated diverticulitis with purulent peritonitis: a meta-analysis of randomized controlled trials. *World J Emerg Surg. 2016* Aug 30;11(1):42.

12. Meyer J, Buchs NC, Schiltz B, Liot E, Ris F. Comment on: Should a colonoscopy be offered routinely to patients with CT proven acute diverticulitis? A retrospective cohort study and meta-analysis of best available evidence. *World J Gastrointest Endosc*. *2020* Sep

13. Garfinkle R, Almalki T, Pelsser V, Bonaffini P, Reinhold C, Morin N, Vasilevsky CA, Liberman AS, Boutros M. Conditional risk of diverticulitis after non-operative management. *Br J Surg*. *2020* Dec;107(13):1838-1845

14. Patel SV, Hendren S, Zaborowski A, Winter D; for Members of the Evidence Based Reviews in Surgery group. Evidence-based Reviews in Surgery Long-term Outcome of Surgery Versus Conservative Management for Recurrent and Ongoing Complaints After an Episode of Diverticulitis: Five-year Follow-up Results of a Multicenter Randomized Controlled Trial (DIRECT-Trial). *Ann Surg. 2020* Aug;272(2):284-287

---

## Abdominal Wall Closure in the Emergency Setting

**Andrew Miller**

Consultant Colorectal Surgeon & Honorary Associate Professor

University Hospitals of Leicester

This presentation will provide answers to following three questions: -

- WHY close the abdomen
- WHEN to close the abdomen
- HOW to close the abdomen

# Avoiding Septic Catastrophe in IBD

**Nicola Eardley**

Consultant General and Colorectal Surgeon

Countess of Chester Hospital NHS Foundation Trust

**Prevent**

This means doing the right operation at the right time with the right expertise and the right preparation/planning.

- Do they need an operation and what operation do they need?
- Define the anatomy/extent of disease, discuss at an IBD MDT.

Optimise the patient

- Aim for a washout period from steroids/biologics if possible.
- Control any sepsis if feasible prior to surgery e.g. drain collections, antibiotics.
- Optimise nutritionally, including considering parenteral nutritional support if obstructive symptoms and potential to improve. Beware that albumin may take a while to increase and may stay low until the disease is dealt with.
- Treat anaemia
- Encourage and support smoking cessation
- Address psychosocial needs and see a stoma therapist if stoma a possibility.
- VTE prophylaxis

Beware delaying surgery, particularly in the acute colitic. Consider whether anastomosis is appropriate in context of any risk factors for leak.

**Suspect**

Even the best technical operations can result in complications. Just because an operation went technically well, they could still have leaked. Consider the possibility of septic complications if a patient is not progressing as well as could be expected, particularly if inflammatory markers are high. Ensure appropriate handover of any patient you are concerned about to the on-call team.

**Diagnose**

Clinical assessment – how sick do they look? Be concerned by a tachycardia.

Blood tests – CRP and WCC usually elevated but may see normal WCC or low WCC with sepsis. Rise in CRP may lag slightly behind clinical picture. A significant drop in albumin is often a feature of GI sepsis. A CT scan may show free gas and free fluid. Document clinical reviews and decision making thought processes.

**Surgical Management**

If a patient is unwell the decision to return to theatre may be easy but it isn't always clear cut. Consider asking for an objective opinion from a colleague.

Things to consider prior to return to theatre

- Timing – the abdomen will generally be hostile between 10 days and 6 weeks following the initial surgery so will need to take this into account. In the period when the abdomen will be hostile consider whether IR drainage of collections rather than return to theatre might be more appropriate.
- Initial sepsis management – sepsis 6 (oxygen, blood cultures, IV antibiotics, IV fluids, check lactate, hourly urine output measurement)
- Predict, discuss and document risk of operative mortality
- Senior surgeon, anaesthetic and critical care involvement
- Frank discussion with the patient and their family
- Document discussions and decision making
- Ensure transfer to the operating theatre in appropriate time-frame

**Things to consider in the operating theatre:**

- The primary aim of the return to theatre is prompt sepsis source control with the aim of restoring normal physiology
- Don't make things worse. Handle bowel with care, including on entering the abdomen. Avoid serosal tears and enterotomies as there's a risk they may not heal.
- Take samples for microbiology MC&S
- Deal with the cause of the problem. If they are sick enough to return to theatre they are usually sick enough for the anastomosis to be taken down. An objective surgical opinion in the operating theatre can be really useful as they won't have the same emotional tie in with the patient as the original operating surgeon.
- Thorough abdominal lavage until the irrigation fluid runs clear.
- Leave drains
- Aim to close the abdomen if possible
- Consider negative pressure wound dressings
- Plan transfer to critical care post op
- Plan to update the family of the findings and clinical picture following the surgery

**Post-operative management**

The challenge has often only just begun. The patient (and surgeon) often face many challenges on the route to recovery.

- Ileus - Patients will often have an ileus in the early days of recovery and this may be exacerbated if there is any ongoing intra-abdominal sepsis. Enteral feeding may be trialled at low then increasing volumes in order to support the gut mucosal barrier. Parenteral nutrition may be required in the early post operative period as the patient

has also often had a period of poor nutrition prior to the decision to take them back to theatre.

- Proximal stoma – Close work with a dietician is essential. In the situation of a double barrelled stoma, distal limb feeding (+/- chyme reinfusion) may be introduced. Parenteral nutrition may be required in order to meet nutritional requirements.
- High output stoma – This requires strict fluid balance documentation with appropriate fluid/electrolyte replacement along with strategies to decrease the stoma fluid losses e.g. loperamide, codeine, dietary changes, oral electrolyte solution, PPI, distal limb feeding.
- Enterocutaneous fistula – Remember SNAP – Sepsis (and Skin care), Nutrition, Anatomy and Plan.
    - Sepsis - Resuscitate the patient. Control sepsis (drains).
    - Skincare – Stoma therapist essential to help with wound care, protecting skin.
    - Nutrition – consider NBM with parenteral nutrition in order to minimise bowel content going past the fistula and hope that there may be spontaneous closure of the fistula.
    - Anatomy – Imaging to gain full appreciation of anatomy prior to any definitive procedure.
    - Plan – If enterocutaneous fistula fails to close spontaneously plan for surgery for closure after at least 6 months, preferably 12 months, to reduce risk of recurrence and mortality. Consider plans for abdominal wall. Consider whether you should be doing this or referring to a tertiary centre.

- IV access issues - Repeated venepuncture and cannulation can result in progressively poor IV access. PICC lines may help but ensure strict asepsis as line infections can be another source of sepsis in an already compromised patient.
- Wound breakdown/care – May need help from stoma care nurses and tissue viability nurses. Consider negative pressure therapy.
- Acute kidney Injury –Patients are at risk of this due to dehydration (particularly with high output stomas/fistulas), sepsis, nephroxicity of drugs eg antibiotics/IV contrast for CT imaging. Ensure team keep a close eye on numbers and aggressively treat/ reverse any AKI to prevent a downward spiral.
- Ongoing sepsis/collections. Suspect undrained sepsis if high output stoma without short bowel. Keep looking for the source. If not abdominal don't forget to think of rarer causes as a result of chronic sepsis eg infective endocarditis, discitis.
- Patient and family communication – Although last on the list this bit is so important. Communication is vital at every step of the journey and it's important that the patient/family do not receive mixed messages. Be honest and open and document everything fully.

**References:**

Useful documents with links to detailed references:


1. Brown, SR, et al., The Association of Coloproctology of Great Britain and Ireland consensus guidelines in surgery for inflammatory bowel disease. *Colorectal Dis*, 2018. 20 Suppl 8: p. 3-117. https://onlinelibrary.wiley.com/doi/full/10.1111/codi.14448

2. Adamina M et al., European Crohn's and Colitis Organisation [ECCO], ECCO Guidelines on Therapeutics in Crohn's Disease: *Surgical Treatment, Journal of Crohn's and Colitis,* Volume 14, Issue 2, February 2020, Pages 155–168, https://doi.org/10.1093/ecco-jcc/jjz187

3. Lamb CA, et al., IBD guidelines eDelphi consensus group, Gaya DR, Iqbal TH, Taylor SA, Smith M, Brookes M, Hansen R, Hawthorne AB. British Society of Gastroenterology consensus guidelines on the management of inflammatory bowel disease in adults. *Gut*. 2019 Dec;68(Suppl 3):s1-s106. doi: 10.1136/gutjnl-2019-318484. Epub 2019 Sep 27. Erratum in: Gut. 2021 Apr;70(4):1. PMID: 31562236; PMCID: PMC6872448. https://www.bsg.org.uk/wp-content/uploads/2019/12/BSG-IBD-Guidelines-2019.pdf


---

## Preventing recurrence in Crohn's disease


**Janindra Warusavitarne**

Consultant Colorectal Surgeon

St Marks Hospital


Surgical paradigms are changing rapidly with the main aim of reducing recurrence. Can surgical technique result in a reduced recurrence rate? In this talk we will look at the strategies for reducing surgical recurrence and look at newer techniques and approaches aimed at reducing recurrence

# Dysplasia and risk in colitis

**Thomas Pinkney**

Professor of Colorectal Surgery & Director of the Birmingham Surgical Trials Consortium (BiSTC)

Birmingham Centre for Observational and Prospective Studies

There is a significantly increased risk of colorectal cancer in Ulcerative Colitis and colonic Crohn's disease due to chronic and/or recurrent mucosal inflammation. The risk is dependent on both disease duration and extent of bowel involvement. Other risk factors include structuring disease, co-existent primary sclerosing cholangitis (PSC), pseudopolyp formation, family history of sporadic colon cancer and persistent colonic inflammation.

There is some evidence that regular 5-ASA therapy in patients with long-term colitis is associated with lower risks of developing cancer, but it is currently unclear if this is due to a directly anti-neoplastic effect of the drug or simply because of the beneficial effects of decreasing the inflammation within the colon. The strongly time-dependent risk increase in cancer rates is important for the multidisciplinary team to consider in patients with longer-term colitis. The most commonly cited crystallisation of this risk comes from a landmark meta-analysis performed nearly 20 years ago which found that the cumulative risk of CRC for any patient with UC was 2% after 10 years, 8% after 20 years and 18% after 30 years of disease.

It is sometimes underappreciated that patients with Crohn's colitis have a very similar time exposure and disease extent dependent risk of colorectal cancer as those with UC. It is thought that similar pathways of chronic inflammation of the colonic mucosa drive this risk.

**Surveillance**

The fact that synchronous colorectal cancers are far more common in IBD settings leads many to ascribe to the 'field change' theory for IBD-related cancers. The detection of dysplasia on colonic surveillance endoscopies serves as a marker of both co-existent cancer and a heightened risk of developing it in the future. A common challenge is the ability to detect dysplasia in the context of an acutely inflamed colon. Similarly, pseudopolyps – which are islands of colonic mucosa in areas of previous severe inflammation where subsequent partial regeneration has occurred – can also make surveillance and targeted biopsy very difficult. Previous surveillance regimens centred on regular colonoscopy with sequential multi-level biopsies of random mucosal areas, as well as targeted biopsy of areas of concern. Over recent years the diagnostic accuracy of such screening interventions have been improved with the

addition of adjuncts such as high-definition white-light colonoscopy and chromoendoscopy with mucosal dye-spraying. The current consensus guidelines on surveillance technique in IBD, including the use of chromoendoscopy, have been agreed by the international SCENIC group in 2015 and further consensus guidelines were released by the British Society of Gastroenterology (BSG) in 2019 which the reader should familiarise themselves with. A key recommendation from the guidelines was that all IBD patients with colonic disease should be offered ileocolonoscopy 8 years after symptom onset to screen for neoplasia, to determine disease extent and decide on the frequency of ongoing surveillance.

Regarding the frequency of these ongoing surveillance endoscopies, patients should undergo a personalised risk stratification as follows:

- Lower risk: next surveillance in **5 years** if extensive colitis with no active endoscopic or histological inflammation or left sided colitis or Crohn's colitis affecting <50% of colon
- Intermediate risk: next surveillance in **3 years** if extensive colitis with mildly active endoscopic or histological inflammation or post-inflammatory polyps (often termed 'pseudopolyps') or family history of colorectal cancer in first degree relative aged ≥50 years
- Higher risk: next surveillance in **1 year** if extensive colitis with moderate/severely active endoscopic or histological inflammation or if stricture or dysplasia in last 5 years or primary sclerosing cholangitis (including post-orthotopic liver transplant) or family history of colorectal cancer in first degree relative aged <50 years

Patients with UC confined to the rectum do not appear to be at increased risk of colorectal cancer and as such do not need to undergo surveillance endoscopies.

A further recent change has been the recognition that not all dysplastic lesions require colectomy, and certain patients with focal low-grade dysplasia (LGD) or visible lesions can be monitored endoscopically or undergo focal endoscopic resection using advanced techniques such as endoscopic mucosal resection (EMR) where necessary. Colectomy is indicated in cases of confirmed high-grade dysplasia which is not endoscopically resectable, and should be considered in those with multifocal or unresectable low-grade dysplasia and those with anatomical difficulties such as structuring disease or dense pseudopolyps which make ongoing surveillance challenging from an anatomical or diagnostic accuracy point of view.

**Key References:**

Bad SI. et al. Colon cancer screening and surveillance in inflammatory bowel disease. *Clin Endosc*. 2014 Nov;47(6):509-15

Beaugerie L, Itzkowitz SH. Cancers complicating inflammatory bowel disease. *N Engl J Med*. 2015 Apr 9;372(15):1441-52. PMID: 25853748.

Eaden JA, Abrams KR, Mayberry JF (2001) The risk of colorectal cancer in ulcerative colitis: a meta-analysis. *Gut 2001* 48: 526–35

Laine L, Kaltenbach T, Barkun A, et al. SCENIC international consensus statement on surveillance and management of dysplasia in inflammatory bowel disease. *Gastrointest Endosc* 2015;81:489–501

Lamb CA, et al. British Society of Gastroenterology consensus guidelines on the management of inflammatory bowel disease in adults. *Gut 2019*;0:1–106. PMID: 31562236

Mowat C, Cole, A, Windsor A et al. (2011) Guidelines for the management of inflammatory bowel disease in adults. *GUT* 60(5): 571-607.

# Decision making after STC

**Justin Davies**

Consultant Colorectal Surgeon

Addenbrooke's Hospital

Subtotal colectomy (STC) and ileostomy remains the most commonly performed surgical procedure for patients with ulcerative colitis (UC), and to a lesser extent those with Crohn's disease (CD). Decision-making following STC needs to be a shared process with the patient at its centre, incorporating an individualised approach that should involve many members of the wider multidisciplinary team and potentially other patients. The potential factors that may be important to patients in this complex decision will be outlined.

This presentation will highlight the reconstructive options after STC in patients with UC, accepting that the sole reason a patient may wish to consider this would be to live without a stoma. We will consider the pros and cons of proctectomy followed by ileoanal pouch surgery or Koch pouch formation, ileorectal anastomosis and living with a permanent ileostomy. Whether particular factors influence restorative surgery being performed or the eventual outcomes from it will be discussed.

In patients with CD, consideration will be given to which patient groups may have the best chance of a successful outcome following restoration of intestinal continuity after prior STC.

# Pre-Operative Shared Decision-making.

**Susan Moug**

Professor of Colorectal Surgery

Royal Alexandra Hospital

Shared decision-making is an essential legal and ethical requirement for a surgeon in both the elective and emergency setting. They should be aware of the implications of the Montgomery ruling and GMC Guidance on this aspect of their surgical practice [1,2]. Whilst defining and linking the reader to these important documents, this presentation will also provide additional angles including the role of the surgical personality, variations in surgical treatments between specialists, what patients' perceptions are and how imbalances between a surgeon and a patient can lead to decisional regret and conflict. Overall, poor shared decision-making leads to poorer outcomes after surgery for each patient [3].

The presentation provides some Top Tips. There are many validated and respected publications available to the surgeon to minimise shared decision-making imbalance. NICE provides shared decision-making tools with further guidance expected this year [4]. Using BRAN (Benefits, Risks, Alternatives and doing Nothing) is an easy applied acronym that coupled with the 'what matters to me' NHS campaign, should ensure the surgeon covers all aspects of the GMC guidance [5]. For risk stratification in the elective setting, the ACS NSQIP calculator is proposed, alongside cardiorespiratory testing [6]. In the emergency setting, the Clinical Frailty Score continues to be simple to apply and is highly prognostic, predicting 30- and 90-day mortality, 30-day complications and discharge destination [7].

Consideration should be given to the High-Risk Surgical Patient guidance published by the Royal College of Surgeons of England [8]. Covering both elective and emergency patients, this work defines a high-risk surgical patient and proposes developing specific multimodal pathways to reduce complications. Pre-assessment clinics (PACS) provide a key role with the capacity to refer to other specialties for input but should also allow the opportunity for prehabilitation. Evolving evidence for prehabilitation shows promising evidence for a reduction in post-operative complications: the largest study to date assessed prehab in 'high-risk' patients: defined as >70 years of age, ASA of 3 or 4, undergoing major abdominal surgery [9]. This powered RCT used motivational interviewing, high-intensity endurance training and physical activity promotion as prehab finding a reduction in complications in the prehab group of 51% with an accompanying increase in endurance aerobic capacity. Unsurprisingly, several professional bodies support the integration of prehabilitation into clinical care [10].

Overall shared decision making is complex and multi-factorial. It is hoped this presentation provides insight and enthusiasm for what is a rapidly evolving area of surgery.

**References:**


1. Montgomery versus Lanarkshire Health Board (Scotland). 2013. https://www.supremecourt.uk/cases/docs/uksc-2013-0136-judgment.pdf

2. General Medical Council. Decision making and consent. November 2020. https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/decision-making-and-consent

3. Hugher TM, Merath K, Chen Q et al. Association of shared decision-making on patient-reported health outcomes and healthcare utilization. *AJS*. 2018;216(1). https://www.americanjournalofsurgery.com/article/S0002-9610(17)31748-8/fulltext

4. National Institute for Health and Care Excellence (NICE). https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-guidelines/shared-decision-making

5. Gentle birth, Gentle Mothering: a Doctor's guide to natural Childbirth and Gentle Early Parenting Choices. Buckley SJ. Available online.

6. American College of Surgeons NSQIP Surgical Risk Calculator. https://riskcalculator.facs.org/RiskCalculator/

7. Parmar K et al. Frailty in Older Patients undergoing Emergency Laparotomy. *Annals of Surgery*. 2021;709-718.

8. The High-Risk general Surgical Patient: Raising the Standard. Royal College of Surgeons of England. 2018. www.rcseng.ac.uk

9. Barberan-Garcia A et al. Personalised Prehabilitation in High-Risk patients undergoing elective major abdominal Surgery: a randomised blinded controlled Trial. *Ann Surg*. 2018; 267(1):50-56.

10. Making the case for prehabilitation in cancer care. An evidence and insight review. *Macmillan Cancer Support 2019*. www.macmillan.org.uk

# Organ Support in Critical Care.

**Patrick MacGoey**

Consultant, General Surgery & Intensive Care Medicine

Royal Alexandra Hospital, Paisley.

Organ dysfunction is the hallmark of critically ill patients. It may result from numerous disease states, including; sepsis, other shock states, trauma / major surgery / burns, pancreatitis and ischaemia-reperfusion.

Organ failure may be defined as impairment of organ function such that homeostasis cannot be maintained without intervention. Intervention, however, may also cause harm. Numerous ICU interventions have been described but it is a prevailing theme that as our knowledge of the costs and benefits of intervention have increased over time, we have become more conservative in their application.

An exhaustive discussion of multi-organ support is clearly not feasible (nor desirable!) in this session. Instead, we will confine ourselves to some key concepts in relation to cardiorespiratory failure and cardiorespiratory support of utmost relevance to the FRCS Critical Care viva.

# Management of High Output Stomas and Fistulas

**Jonathan Epstein**

Consultant Colorectal Surgeon

Salford Royal NHS Foundation Trust

Newly formed ileostomies are often problematic and AKI or the development of CKD is common. High output is variably defined and it may be more useful to look at the effect on the patient rather than the output itself. Enterocutaneous fistulas are typically a more complex issue with multiple associated management challenges but treatment of the output itself is very similar. Analysis of the cause of high output may be useful as there may be a specifically treatable problem. Input from the stomatherapy team is essential in skin care and in building a patient's confidence. Adjustments to diet and fluid intake are often helpful and there are pharmacological treatments. High output may well result in intestinal failure and need specialist management. If stoma reversal is an option, it is likely to resolve things, if reconstruction of an enterocutaneous fistula is to proceed safely involving an experienced multidisciplinary team is recommended.

# Perioperative Bleeding

**Austin G Acheson**

Consultant Colorectal Surgeon

Nottingham University Hospital

Bleeding during surgery is often unavoidable. There are times when minor bleeding is easily controlled but some of the most challenging cases for surgeons are when sudden catastrophic bleeding occurs and this can be life threatening, stressful for the team and difficult to stop.

The preoperative assessment of all patients undergoing colorectal surgery is essential for identifying those at risk of potential perioperative bleeding and this is also an opportunity to optimise therapy to minimise these risks. Patients with underlying bleeding disorders will need careful decisions made following discussions with haematology and those with preoperative anaemia may require correction of their haemoglobin prior to surgery [1]. Those patients on antiplatelet or anticoagulant drugs will need assessed to estimate the thrombotic and bleeding risks to the patient. This may require multidisciplinary discussions with cardiology, haematology, surgery, and anaesthesia to come up with an agreed plan regarding the timing of anticoagulation/antiplatelet interruption as well as determine if bridging therapy with Low Molecular Weight Heparin is necessary in the perioperative period [2,3,4,5].

Despite optimising patients prior to surgery unexpected surgical bleeding will often still occur. Intraoperative haemostasis can usually be achieved in three main ways: physical, thermal and chemical. Physical methods involve adequate exposure of the field to enable good views. This may involve extending incisions, appropriate use of assistants, retractors, lighting, and suction. Packing the space and controlling the bleeding with clamps, sutures, ties are important and the addition of thermal energy sources such as diathermy, harmonic scalpel or ligasure often compliment the process. These techniques are often sufficient to control mild to moderate bleeding episodes.

Despite these measures if bleeding persists then chemical methods may be necessary. Tranexamic acid has an important role in major colorectal cases with significant blood loss and its use is becoming more routine in current practice [6,7] There are numerous topical haemostatic agents on the market that are all excellent at stopping surgical haemorrhage with the more commonly used products being Surgicel fibrillar, FloSeal, Veriset, Tachosil and Tisseal [8,9].

Getting control of perioperative bleeding is clearly down to all members of the team with the anaesthetist clearly an integral member of this team. They ensure that intraoperative hypothermia is avoided and help administer tranexamic acid timely. The anaesthetist also co-ordinates and delivers packed cells, FFP, platelets and other specialist products that might be required.

With the use of all these physical, thermal, chemical, anaesthetic, and haematological strategies most bleeding will be controlled but severe bleeding during surgery remains one of the most tricky and dangerous complications that the surgical team will ever have to face.

**References:**


1. Keeler BD, Simpson JA, Ng O, Padmanabhan H, Brookes MJ, Acheson AG; on behalf of the IVICA Trial Group. Randomized clinical trial of preoperative oral versus intravenous iron in anaemic patients with colorectal cancer. *Br J Surg*. 2017 Feb;104(3):214-221

2. Shah A, Palmer AJR, Klein AA. Strategies to minimize intraoperative blood loss during major surgery. *Br J Surg*. 2020 Jan;107(2):e26-e38

3. van Veen JJ, Makris M. Management of peri-operative anti-thrombotic therapy. *Anaesthesia* 2015; 70(Suppl 1): 58–67.

4. Keeling D, Tait RC, Watson H; British Committee of Standards for Haematology. Peri-operative management of anticoagulation and antiplatelet therapy. *Br J Haematol* 2016; 175: 602–613.

5. Douketis JD, Spyropoulos AC, Duncan J, Carrier M, Le Gal G, Tafur AJ, Vanassche T, Verhamme P, Shivakumar S, Gross PL, Lee AYY, Yeo E, Solymoss S, Kassis J, Le Templier G, Kowalski S, Blostein M, Shah V, MacKay E, Wu C, Clark NP, Bates SM, Spencer FA, Arnaoutoglou E, Coppens M, Arnold DM, Caprini JA, Li N, Moffat KA, Syed S, Schulman S. Perioperative Management of Patients With Atrial Fibrillation Receiving a Direct Oral Anticoagulant. .*JAMA Intern Med*. 2019 Aug 5;179(11):1469-78

6. Padhi S, Kemmis-Betty S, Rajesh S, Hill J, Murphy MF. Blood transfusion: summary of NICE guidance. *BMJ* 2015; 351: h5832.

7. Gerstein NS, Brierley JK, Windsor J, Pannikath PV, Ram H, Gelfenbeyn et al. Antifibrinolytic agents in cardiac and noncardiac surgery: a comprehensive overview and update. *J Cardiothorac Vasc Anesth* 2017; 31: 2183–2205.

8. Polychronidis G, Huttner FJ, Contin P, Goossen K, Uhlmann L, Heidmann M et al. Network meta-analysis of topical haemostatic agents in thyroid surgery. *Br J Surg* 2018; 105: 1573–1582.

9. Brustia R, Granger B, Scatton O. An update on topical haemostatic agents in liver surgery: systematic review and meta analysis. *J Hepatobiliary Pancreat Sci* 2016; 23: 609–621

# State of the Art Lecture:
# Life Hacks for research

**Steve Brown**

Professor of Colorectal Surgery, Northern General Hospital NHS Trust

President, ACPGBI

Due to the pressures of a busy NHS job, it is difficult for many surgeons to continue to produce quality research when they become consultants. This is despite many who have shown obvious talent as trainees and whilst doing higher degrees. Whilst there are now academic career pathways for a small proportion of colorectal surgeons there still remains (to steal a phrase from Jim Tiernan) this 'lost tribe'. The UK surgical community is losing out as a consequence. Having been through the trauma of 20 years essentially as an NHS consultant I may have learnt one or two painful lessons that I am willing to pass on and that I hope may help future colleagues to keep the research ball rolling!

As a flavour of the talk here is my crib sheet of life hacks for writing a grant proposal.

*(table shown on next page)*

## *Life hacks to getting a grant*

- Inclusion / exclusion criteria *(too narrow)*
- Identification of numbers of eligible people *(too optimistic)*
- Recruitment rates *(vague, too optimistic)*
- Follow-up rate *(unrealistically high or unacceptably low)*
- Effect size *(much too large)*
- Number and types of sites *(willingness absolutely confirmed)*
- CTU / RDS / network involvement *(missing)*
- Data collection — *(too many measures, too often. patient fatigue)*
- Analysis plan *(absent or relates to only part of data)*
- Patient centred outcomes *(or justify why not)*
- Specify Intervention *(vague or under-developed, not theoretically underpinned)*
- Population diversity *(Adds complexity if you do, damned if you don't)*
- Estimates of time for set up, approvals *(Too optimistic)*
- Qualitative component *(tacked on, same for health economics)*
- Approach to PPI *(be honest and try to be very very thorough)*
- Assertions regarding behaviour of health care professionals and other staff e.g. "GPs will..." *(they won't)*

# Making the Assessment

**Julie Cornish**

Consultant Colorectal Surgeon and Honorary Senior Lecturer

Cardiff and Vale University Health Board

## Clinic environment

Can see PF patients in a general colorectal clinic but the development of a dedicated pelvic floor clinic can be advantageous as it allows the PF nurse and consultant to see patients in parallel (increasing efficiency), allows for longer time slots and can be beneficial for trainees to see PF patients in a focused way.

## Know the pathway in your hospital

- Does the consultant you are working with have a PF interest? If not, who does in the department?
- Do you have a nurse specialist /community continence team/PF physiotherapist/ dietician/psychologist/pelvic pain team/gastroenterologist with an interest in functional bowel disorders?
- If you don't have it locally, where do you need to send the patients?

## History

- Need time – 10 minutes is not enough to gain a good history as need to explore multiple systems and understand the patient as a whole. Treatment success for functional conditions depends on understanding what the patient deems as successful - is it realistic? Surgery is not a magic bullet!
- Don't just read previous letters – start from scratch and avoid prejudging stereotypes. Take the patient seriously as many will have been seen by multiple doctors and may be angry/confrontational initially.
- Don't just ask about bowel symptoms. Need information on bladder symptoms, gynaecological history, obstetric history, sexual function (inc dyspareunia), pain (esp in pelvis), previous surgery, radiotherapy, diet, medication.
- Need to exclude underlying pathologies such as cancer or IBD (Red flag symptoms)

- When did the symptoms start? When did they get worse? E.g. Why have they come to clinic now as opposed to ten years before? (Many patients will have the condition for several years prior to presentation to a specialist PF clinic).

- Baseline assessments with validated symptom and QoL scores useful (St Marks score, FISI, PAC-SYM, LARS)

- May have to ask direct questions in a sensitive and appropriate way about psychological symptoms, history of physical or sexual abuse. Patients may or may not volunteer this initially.

**How do pelvic floor patients present?**

Most patients fall into two broad groups;

i) Women who have had children and symptoms are mainly related to childbirth and pregnancy. This may have developed immediately or shortly after or may have developed after menopause.

ii) Men and nulliparous women who have symptoms as a result of GI or pelvic surgery, radiotherapy, underlying connective disorders, psychological or mental conditions leading to inappropriate defaecation techniques, history of eating disorders or laxative abuse.

**Constipation**

- Slow transit / evacuation difficulty / combination of the two?

- Feeling of incomplete emptying

- Clustering – several visits to toilet to defaecate in short time period

- Digitation (vaginal/rectal), splinting of perineum, rocking on the toilet

- How long do they sit on the toilet?

- Slow transit constipation – may no longer feel the call to stool.

- Often describe bloating, abdominal pain, excess flatus, sometimes alternating bowel function (overflow)

- Ask about urgency and incontinence as may have a mixed picture

- Medication history (opioids, gabapentin, antipsychotics, laxatives used)

**Faecal incontinence**

- Passive (leak when unaware) and urge incontinence
- Ask about urgency – may only have had one accident and then altered lifestyle to avoid more
- Flatus incontinence
- Do they wear pads/take spare clothes/alter what they do around their bowels
- Stool consistency
- Details on any pregnancies and deliveries – tears/episiotomies/forceps/large babies/ prolonged labour
- Previous anorectal surgery, liver or gallbladder symptoms/surgery (bile salt malabsorption)
- Medication (e.g metformin)
- Associated rectal prolapse/prolapsing haemorrhoids
- Passive incontinence particularly - may be associated with ODS symptoms

**Physical examination**

- Important to do general physical and abdominal examination – assess fitness for surgical options as may determine what is offered
- Optimisation of underlying medical problems important – e.g. guidelines on BMI for SNS/surgery
- Examination of the anorectum and perineum
- Perineum: scarring, deformity (from childbirth/previous interventions)
- Anus – is it gaping? Or in spasm/bulky internal sphincter
- Perianal skin: soiling, excoriation, fissures, skin tags or haemorrhoids
- Perianal sensation and anocutaneous reflex
- Ask to bear down on digital exam: patients with dyssynergia may demonstrate paradoxical contraction of the external sphincter, puborectalis, ineffective perineal descent, or impaired push effort or a combination.
- Document vaginal prolapse

- Digital rectal exam: ask the patient to bear down, squeeze and relax
- Assess sphincter bulk, any deficits, deficient perineal body, rectocele
- Rigid sigmoidoscopy – may be limited value other than assessing mucosa
- Proctoscope – more useful, assessment of haemorrhoids/mucosal prolapse

**Investigations to consider**

- Luminal investigations if not already performed. Usually colonoscopy but in frail patients flexible sigmoidoscopy and CT AP. May find CTC more useful in slow transit constipation patients with significant pain symptoms as can struggle to tolerate colonoscopy.
- Constipation: Thyroid function, calcium, glucose
- Incontinence: TFTs, celiac screen/ Stool MC &S/faecal calprotectin/faecal elastase
- Anorectal manometry
- Transit study (constipation)
- Endoanal USS
- Defaecating proctogram / MRI proctogram (more useful when multi compartment prolapse)
- Pudendal nerve latency testing (not as commonly performed now)
- Examination under anaesthesia – useful to assess when symptoms and Ix findings not correlating.

# Best Medical Management Strategies

**Sushil Maslekar**

Consultant Colorectal Surgeon

St James University Hospital

Faecal incontinence and pelvic floor dysfunction remain a common and growing problem. Although there are multiple novel surgical interventions for the treatment of pelvic floor dysfunction, the mainstay of initial therapy remains medical management.

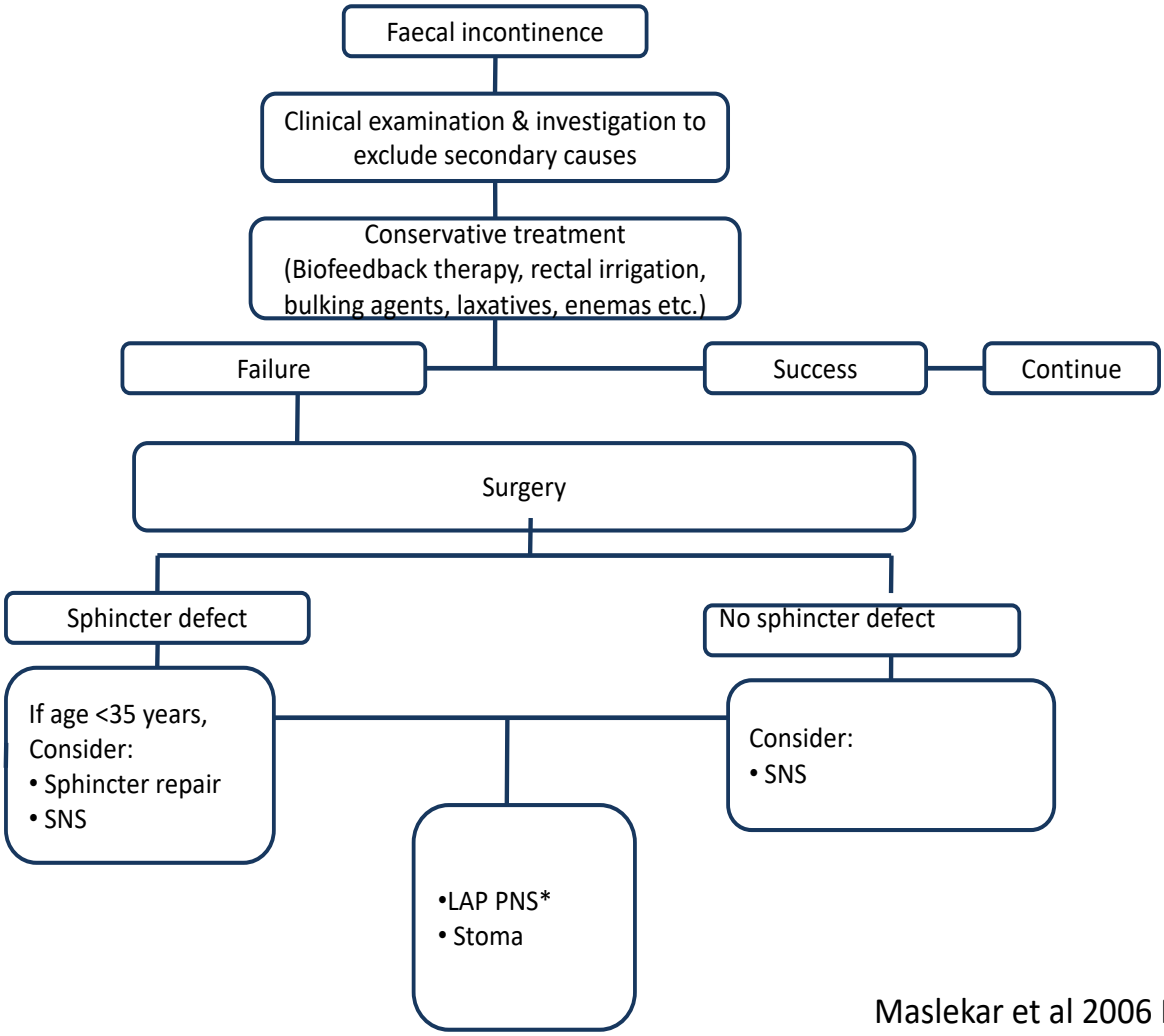
There are no studies in the literature analysing how to select patients for operative versus conservative or drug management. Therefore, patient selection is pivotal. The general consensus is that a trial of conservative and medical treatment should be considered in the majority of patients as the first line of management particularly given that they are mostly inexpensive and have no significant morbidity associated with them.

The first step in the management of pelvic floor dysfunction is to rule out other serious pathology (cancer, colitis etc) and treat any underlying medical conditions that may be contributing to the former. This involves withdrawal or minimisation of any pharmacologic agents that may be exacerbating the symptoms.

Once initial work-up is complete, the next step in management is a trial of conservative therapies, such as dietary or lifestyle modification. Dietary modifications include the addition of fibre and other related bulking agents to the patient's diet. Lifestyle modifications include scheduled toileting and other behaviour changes to pre-empt the occurrence of symptoms. Despite a paucity of large, well-controlled trials investigating the efficacy of these therapies, they are widely used and typically very well tolerated. Drug treatment is usually the next step in management of patients with bowel dysfunction. For patients with faecal incontinence, anti-diarrhoeal medications are the mainstay including loperamide. A combination of loperamide with bulking agents can be used in a proportion of patients.

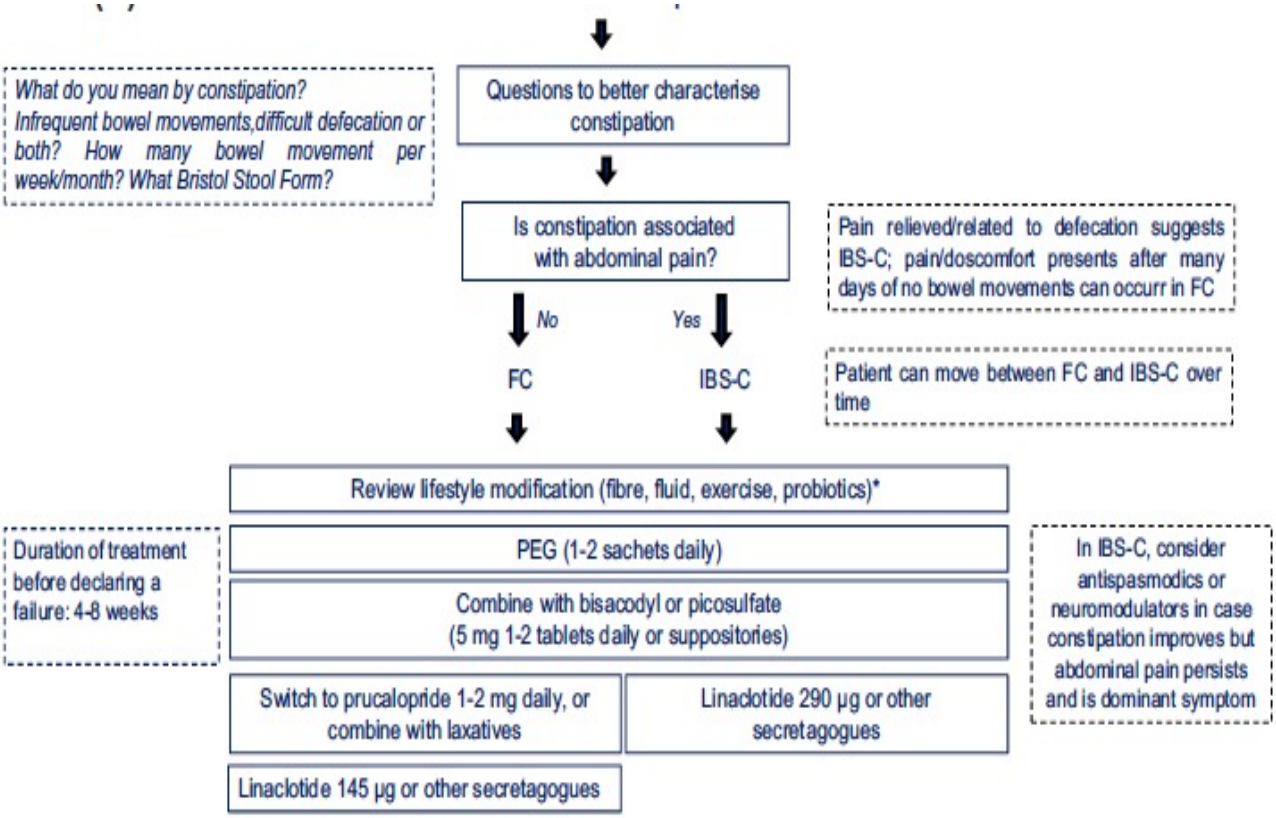
For patients with constipation and obstructed defaecation, medical treatment would involve laxatives of varying types.

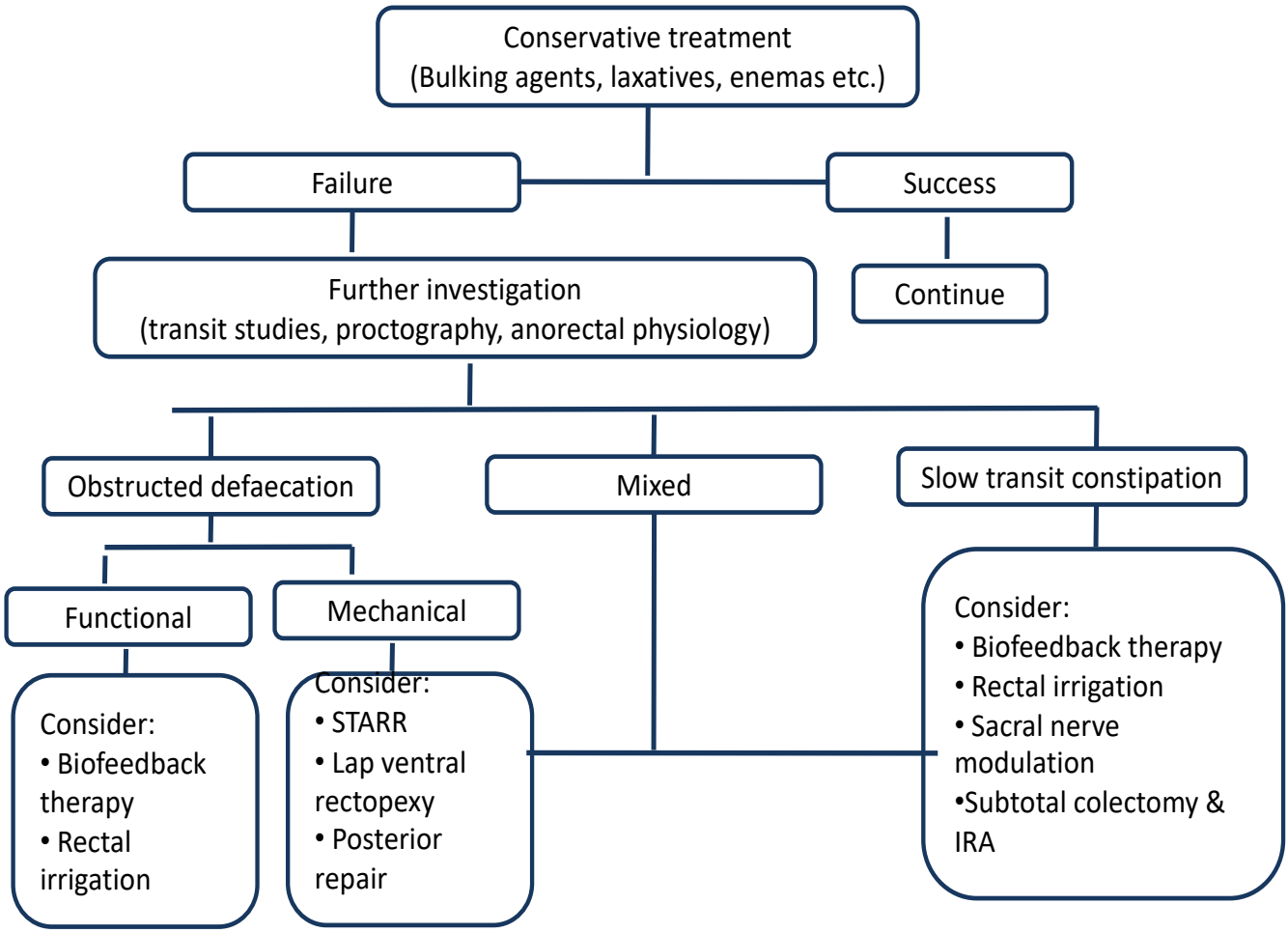
The following algorithms explain further best medical management strategies:-




Maslekar et al 2006 PMJ

# Chronic Constipation




Conservative treatment
(Bulking agents, laxatives, enemas etc.)
Failure
Success
Continue
Further investigation
(transit studies, proctography, anorectal physiology)
Obstructed defaecation
Mixed
Slow transit constipation
Functional
Mechanical
Consider:
• Biofeedback therapy
• Rectal irrigation
Consider:
• STARR
• Lap ventral rectopexy
• Posterior repair
Consider:
• Biofeedback therapy
• Rectal irrigation
• Sacral nerve modulation
•Subtotal colectomy & IRA

# Managing Acute Obstetric Injuries

**Jennie Grainger**

Consultant Colorectal Surgeon

Countess of Chester Hospital

In the UK, anal incontinence (AI) after birth is thought to affect 40,000 mothers, or 1 in 20 annually [1] but this may be underestimated. Injury to the anal sphincter is recognized as the most common cause of AI and anorectal symptoms in otherwise healthy women.

Obstetric anal sphincter injuries may be seen at the time of delivery – these can be referred to as 'overt' injuries; or they may be detected after additional investigations such as endoanal ultrasound scan after birth. These are termed 'occult'.

When we discuss these sphincter injuries, we can refer to them as OASI – Obstetric Anal Sphincter Injury. Here we are referring to grade 3 perineal injuries and above:

| Table 1: Classification of OASI ( Sultan 1999) [2] | |
|---|---|
| First degree | Injury to perineal skin only |
| Second degree | Injury to perineum involving perineal muscles but NOT involving anal sphincter |
| Third degree | Injury to perineum involving anal sphincter complex |
| 3a | Less than 50% EAS |
| 3b | More than 50% EAS |
| 3c | EAS and IAS |
| Fourth degree | Injury to perineum involving anal sphincter complex (EAS and IAS) and anal epithelium |

The identification of these injuries is done by the Obstetrician in the delivery room. A careful examination should be performed with good light. Those with a tear that is more than superficial in depth should have a systematic rectal examination performed prior to repair. This should be performed by someone who is experienced in sphincter repairs with adequate training.

The EAS can be repaired acutely using an overlapping or end-to end anastomosis with no significant difference in outcome. However, an overlapping technique requires more mobilisation and dissection of the sphincter ends and is only possible with full thickness tears. IF an injury in the IAS is present, it is advised that this is repaired separately, as women who display an IAS defect on postpartum ultrasound have more AI. [3,4]

Prophylactic single dose IV antibiotics should be administered for the reduction of perineal wound complications following OASI repair. Laxatives should be prescribed as they are associated with earlier and less painful first bowel motions.

Women should be informed about the degree of their injury with follow up arranged at 6-12 weeks postpartum, ideally within a perineal trauma clinic. All women should be referred for pelvic floor physiotherapy.

**Where does the colorectal surgeon fit in?**

We are often not the most experienced people to perform the repair acutely, with less exposure to delayed sphincter repairs in our training, let alone acute repairs.

Following an acute repair – 64% remain asymptomatic at 6 months but this is well known to decline with time. Twenty-seven percent have mild AI and 8.7% have severe symptoms [5]. We are likely to see these women further down the line in outpatient clinics with their incontinence symptoms.

**What about early secondary repair?**

An early secondary repair may be performed for a missed injury, or if a primary repair is complicated by wound rupture or infection. Early secondary repair is classed as anything within 21 days of delivery. Functional long-term outcomes are comparable to those following a late sphincter repair but there appears to be a high risk of complications, mainly fistulas, which need to be taken into account.

**In summary,**

- OASI is a significant injury sustained in childbirth that carries huge morbidity to a previously healthy mother

- These women need early identification of their injury
- They deserve the most experienced person to do their repair
- In some circumstances an early secondary repair can be performed
    - Likely to result in a better functional outcome than no repair in the short term
    - Can be associated with a significant risk of complications especially fistulae.
- The colorectal surgeon is more likely to encounter these ladies at various times postpartum with their symptoms of AI.

**References:**


1. Antonakou A. The long-term physical, emotional and psychosexual outcomes related to anal incontinence after severe perineal trauma at childbirth. *Eur J Midwifery* 2018;2(August):8

2. Sultan A.H. Editorial: Obstetric perineal injury and anal incontinence. *Clin Risk.* 1999;5(5):193–196.

3. SOGC CLINICAL PRACTICE GUIDELINE No. 330, December 2015 Obstetrical Anal Sphincter Injuries (OASIS): Prevention, Recognition, and Repair

4. Green top guidelines 2015. The management of Third- and Fourth-degree perineal tears. https://www.rcog.org.uk/globalassets/documents/guidelines/gtg-29.pdf

5. Kuismanen K et al. Outcomes of primary anal sphincter repair after obstetric injury and evaluation of a novel three-choice assessment. *Tech Coloproctol.* 2018; 22(3): 209–214.

# Surgical Options for Rectal Prolapse

**Jonathan Randall**

Consultant Colorectal Surgeon

University Hospital Bristol

When assessing a patient presenting with rectal prolapse it is important to differentiate external rectal prolapse (ERP) from haemorrhoids, internal prolapse or other pelvic organ prolapse. ERP is circumferential and the muscle layer of the bowel can be felt externally. Examination on a commode or under anaesthesia, defecating proctography or patient's smart phone images can be helpful! Understanding precipitating factors is important for treating prolapse and preventing recurrence. A history of connective tissue disorders, long term constipation or substance misuse may be particularly important in younger patients. Whilst ERP usually necessitates a surgical approach, conservative measures including input from a nurse specialist or physiologist can be valuable in providing support and addressing issues that may otherwise lead to recurrence.

Surgical approaches to ERP are largely divided into perineal or abdominal approaches. It is important to spend time with patients explaining the relative merits of the different approaches and the risks involved. Attention should be given to how far any associated anatomical abnormalities will be corrected by the procedure, potential functional outcomes and recurrence rates. Specific approaches include:

- Delorme's procedure (perineal)- excision of a tube of mucosa then plication of muscle before resuturing the mucosa. Often favoured as a shorter operation but risks include bleeding and high recurrence rates over time.

- Altemeier procedure (perineal)- perineal rectosigmoidectomy before reanastomosis. Suitable for large prolapses but leaves a low pelvic anastomosis with potential for pelvic sepsis.

- Thiersch 'Wire'/procedure (perineal)- reinforcing the anal canal with an artificial sling. Various materials described. Often reserved for very frail patients.

- Ventral Mesh Rectopexy (VMR). Outcomes described by D'Hoore in 2004[1]. Anterior dissection of the rectum then placement of a mesh to support the rectum. Mesh types (synthetic and biologic) and sutures have changed over time and favourable recurrence rates have been described. However potentially devastating complications include mesh erosions, pain, fistula, infections and need for stoma have been reported. This led to VMR being one of the subjects of the Cumberlege report[2] which details the need for training, registries, complication reporting and specialised removal centres.

- Posterior Suture Rectopexy. Posterior dissection of the rectum followed by sutures for support. Posterior dissection may predispose to constipation although a recent randomised trial suggests equivalent functional outcomes, at least at 12 months[3].

- Resection rectopexy. Combining rectopexy with a sigmoid colectomy, often considered for those with chronic constipation and a redundant sigmoid colon. Inherent risk of anastomotic leak.

In the UK The Pelvic Floor Society (www.thepelvicfloorsociety.co.uk) supports clinicians and patients and accredits Multidisciplinary Teams (MDT). They provide patient information leaflets and enhanced consent forms. Registries kept by the society suggest at least a levelling off of the number of ventral mesh rectopexies being performed in the UK. Data from the PROSPER trial[4], a randomised study that compared perineal and abdominal approaches, and different operations with each approach, didn't show significant differences in recurrence rates or functional outcomes. However, this study did illustrate some of the difficulties in recruitment to prolapse trials with the suggestion that many surgeons may be reluctant to change practice.

**Summary of themes**

- Consider the role of conservative management
- Tailor surgical options to the patient and prolapse
- Involve patients in surgical decision making. Consider 'enhanced' consent
- Discuss cases in an MDT where possible
- Monitor outcomes- recurrence rates, functional outcomes, quality of life and complications. Use of registries and complication reporting.
- Appropriate training

**References:**


1. D'Hoore A, Cadoni R, Pennickx F. Long-term outcome of laparoscopic ventral rectopexy for total rectal prolapse. *Br J Surg. 2004* Nov;91(11): 1500-5

2. https://www.immdsreview.org.uk/downloads/IMMDSReview_Web.pdf

3. Lundby L, Iversen L, Buntzen S et al. Bowel function after laparoscopic posterior sutured rectopexy versus ventral mesh rectopexy for rectal prolapse: a double-blind, randomised single-centre study. *Lancet Gastroenterol Hepatol. 2016* Dec;1(4): 291-297

4. Senapati A, Gray R, Middleton L et al. PROSPER: a randomised comparison of surgical treatments for rectal prolapse. *Colorectal Dis. 2013* Jul;15(7):858-68

# Where does FIT fit in?

**Sarah Mills**

Consultant Colorectal Surgeon

Chelsea & Westminster Hospital

Faecal immunochemical test (FIT) is a new test for colorectal cancer. It can also detect significant colonic polyps. Also known as qFIT (qualitative FIT) it measures μg of blood/gram of stool and the level of the measurement can be correlated with the % chance of colorectal cancer being present.

If measured at its point of detection (POD) <2μg of blood/gram of stool it is as reliable as colonoscopy at detecting colorectal cancer. Using this level as a cut off would result in a reduction of 60% in the number of referrals made on colorectal 2 week wait pathways, hence allowing endoscopy resource to be reserved for screening colonoscopies generated from the BCSP which have a threefold higher yield of cancer (11.8%) than 2ww pathways (4%).

In the Steele et al study of;

- 4841 symptomatic patients
- 2166 patients (44.7%) with FIT <10 μg
- 14 (0.6%) were diagnosed with CRC
- NNS (number needed to scope) of 155 to find a CRC
- Over half of those diagnosed with CRC with f-Hb <10 μg/g had co-existing anaemia
- The risk of having CRC with a FIT <10 is 6/1000. If there is no anaemia it is 3/1000.

Percentage of patients with colorectal cancer at each level were;

FIT <10 0.6% (NNS =155)

FIT >10 9.4% (NNS =11)

FIT>400 22.4% (NNS =5)

Further studies, including the Nottingham study, have looked at increasing accuracy of these levels by correlating them with symptoms.

Protocols have been developed for managing 2WW referrals based on FIT level.

In general;

- If > 120 µg/g, refer urgently
- If > 10 µg/g, refer for investigation
- If < 10 µg/g AND anaemia or abdominal pain, refer for investigation
- If < 10 µg/g and NO anaemia or abdominal pain:
    - Reassure/benign pathway investigations
    - Repeat qFIT & Hb level in 2-3 months

FIT(sensitivity in detecting CRC 70-80%) is extremely useful in screening for colorectal cancer (and will replace the current faecal occult blood test (FOBT- sensitivity 30-50%) in the BCSP. The current level for referral for colonoscopy or CTVC in the BCSP is 120µg.

**References:**


Faecal immunochemical test is superior to symptoms in predicting pathology in patients with suspected colorectal cancer symptoms referred on a 2WW pathway: a diagnostic accuracy study. D'Souza N, Georgiou Delisle T, Chen M, Benton S, Abulafi M; NICE FIT Steering Group. *Gut*. 2020 Oct 21:gutjnl-2020-321956. doi: 10.1136/gutjnl-2020-321956. Online ahead of print.PMID: 33087488

Using the faecal immunochemical test in patients with rectal bleeding: evidence from the NICE **FIT** study. Hicks G, D'Souza N, Georgiou Delisle T, Chen M, Benton SC, Abulafi M; NICE FIT steering group. *Colorectal Dis*. 2021 Feb 19. doi: 10.1111/codi.15593. Online ahead of print. PMID: 33605522

Yield of colorectal cancer at colonoscopy according to faecal haemoglobin concentration in symptomatic patients referred from primary care. McSorley ST, Digby J, Clyde D, Cruickshank N, Burton P, Barker L, Strachan JA, Fraser CG, Smith K, Mowat C, Winter J, Steele RJC. *Colorectal Dis*. 2020 Oct 16. doi: 10.1111/codi.15405. Online ahead of print. PMID: 33064898

Early clinical outcomes of a rapid colorectal cancer diagnosis pathway using faecal immunochemical testing in Nottingham. Chapman C, Thomas C, Morling J, Tangri A, Oliver S, Simpson JA, Humes DJ, Banerjea A. *Colorectal Dis*. 2020 Jun;22(6):679-688. doi: 10.1111/codi.14944. Epub 2020 Jan 29.PMID: 31876975

Colonoscopy at a crossroads - Which direction to take in the UK after the coronavirus pandemic? Cripps NPJ, **Mills SC**, Docherty JG, Baragwanath P; Colonoscopy Sub-Committee of the Association of Coloproctology of Great Britain, Ireland. *Colorectal Dis*. 2020 Dec 22. doi: 10.1111/codi.15437. Online ahead of print.PMID: 33350046

# Polypectomy

**James Wheeler**

Consultant Colorectal Surgeon

Cambridge University Hospitals NHS Foundation Trust

The colonoscopic removal of colorectal polyps reduces the incidence and mortality of colorectal cancer (CRC) and should be considered an essential skill for all Colorectal Surgeons who perform colonoscopy. There are various polypectomy techniques and devices available for endoscopists, and their use is often varied based on local preferences and availability. This presentation is aimed at addressing major issues concerning the practical use of polypectomy and endoscopic mucosal resection (EMR), to allow an understanding of the essential techniques in colonoscopic polypectomy and CRC prevention.

The ability to perform complete and safe polypectomy enables Colorectal Surgeons to significantly benefit our patients. Proficiency of basic polypectomy, and an understanding of the issues involved in advanced polypectomy, should be the aim of all colonoscopists.

1. Cold snare polypectomy (CSP) is the preferred technique for removal of small polyps (size ≤ 5 mm). This technique has high rates of complete resection, adequate tissue sampling for histology, and low complication rates.

2. CSP is recommended for sessile polyps 6 - 9 mm in size because of its superior safety profile, although evidence comparing efficacy with hot snare polypectomy (HSP) is lacking.

3. HSP is recommended removal of sessile polyps 10 - 19 mm in size. Thermal injury to the colonic wall is a potential risk and the colonoscopist should consider submucosal injection prior to HSP.

4. HSP is recommended for pedunculated polyps. There is an increased risk of bleeding in pedunculated colorectal polyps with a head ≥ 20 mm or a stalk ≥ 10 mm in diameter, and it is recommended that pretreatment of the stalk with injection of dilute adrenaline and/or mechanical hemostasis is considered.

5. The aim of endoscopic mucosal resection (EMR) is to achieve a completely resected lesion with the minimum number of pieces, together with clear resection margins and without the need for supplementary ablative techniques.

6. Colonic lesions should be assessed thoroughly prior to EMR to identify features suggestive of poor outcome.

7. Features associated with incomplete resection or recurrence include lesion size > 40 mm, ileocecal valve location, prior failed attempts at resection, and size, morphology, site, and access (SMSA) level 4.

8. It is recommended that endoscopic coagulation (snare-tip soft coagulation or coagulating forceps) or mechanical therapy, with or without the combined use of dilute adrenaline injection is used for intraprocedural bleeding.

**References:**


1. Cotton and Williams' *Practical Gastrointestinal Endoscopy – The Fundamentals. Seventh Edition*. Haycock A, Cohen J, Saunders BP, Cotton PB and Williams CB.

2. Colorectal polypectomy and endoscopic mucosal resection (EMR): European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline. Ferlitsch M, Moss A, Hassan C, Bhandari P, Dumonceau JM, Paspatis G, Jover R, Langner C, Bronzwaer M, Nalankilli K, Fockens P, Hazzan R, Gralnek IM, Gschwantler M, Waldmann E, Jeschek P, Penz D, Heresbach D, Moons L, Lemmers A, Paraskeva K, Pohl J, Ponchon T, Regula J, Repici A, Rutter MD, Burgess NG, Bourke MJ.Ferlitsch M, et al. *Endoscopy. 2017 Mar;49(3):270-297.*

3. British Society of Gastroenterology/Association of Coloproctologists of Great Britain and Ireland guidelines for the management of large non-pedunculated colorectal polyps. Rutter MD, Chattree A, Barbour JA, Thomas-Gibson S, Bhandari P, Saunders BP, Veitch AM, Anderson J, Rembacken BJ, Loughrey MB, Pullan R, Garrett WV, Lewis G, Dolwani S. Rutter MD, et al. *Gut. 2015 Dec;64(12):1847-73.*

# Management of Complex Rectal Polyps

**Amyn Haji**

Consultant Colorectal Surgeon

King's College Hospital NHS Foundation Trust

Endoscopic diagnosis is of paramount importance in the decision-making process for treatment of rectal polyps. This is particularly so for patients with rectal lesions, because inappropriate first treatment can have disastrous consequences for the patient. A piecemeal endoscopic mucosal resection of a rectal lesion that subsequently harbours incidental malignancy on histology results in decision dilemmas regarding surgical management. Piecemeal resection can make an accurate assessment of the depth of invasion of an adenocarcinoma difficult, which could potentially lead to subsequent incorrect over- or undertreatment of a lesion. It has been suggested that inaccuracies in the assessment of depth of invasion due to piecemeal resection have led to invasive recurrences of adenocarcinoma.

Preprocedural biopsy is not always helpful because it needs an accurate endoscopic eye and examination to determine appropriate target biopsy, although this is not always needed because it often leads to fibrosis before subsequent endoscopic treatment. We have shown that multimodal endoscopic assessment with magnification endoscopy, high-frequency mini probe ultrasound, and MRI rectum are far superior to biopsy for prediction of submucosal invasive cancer[1]. The options for treatment, in addition to endoscopic mucosal resection, are endoscopic submucosal dissection (ESD), transanal surgery (transanal endoscopic microsurgery or transanal minimally invasive surgery), full-thickness resection, or laparoscopic surgery. The modality of treatment used often depends on local expertise rather than endoscopic diagnosis, and the latter is the cornerstone of management of these rectal polyps.

We advocate a standardized approach to the assessment of rectal polyps endoscopically[1] (Fig. 1). This approach is relevant to all polyps in the colon and rectum; however, en bloc resection for all rectal lesions is mandatory at our institution. Magnification endoscopy has been routinely practiced in our unit for the past decade with 80x to 130x zoom endoscopy routinely. Spectral imaging is used to evaluate the vascular pattern according to the Japanese classification (Japan NBI Expert Team), in addition to magnification chromoendoscopy to determine the Kudo pit pattern. Morphology of the lesions according to the Paris classification also guides management in addition to the spectral imaging and pit pattern classification. Patients with lateral spreading tumours (LSTs) are often referred to tertiary referral practices for consideration of endoscopic resection. En bloc resection by ESD is often reserved for

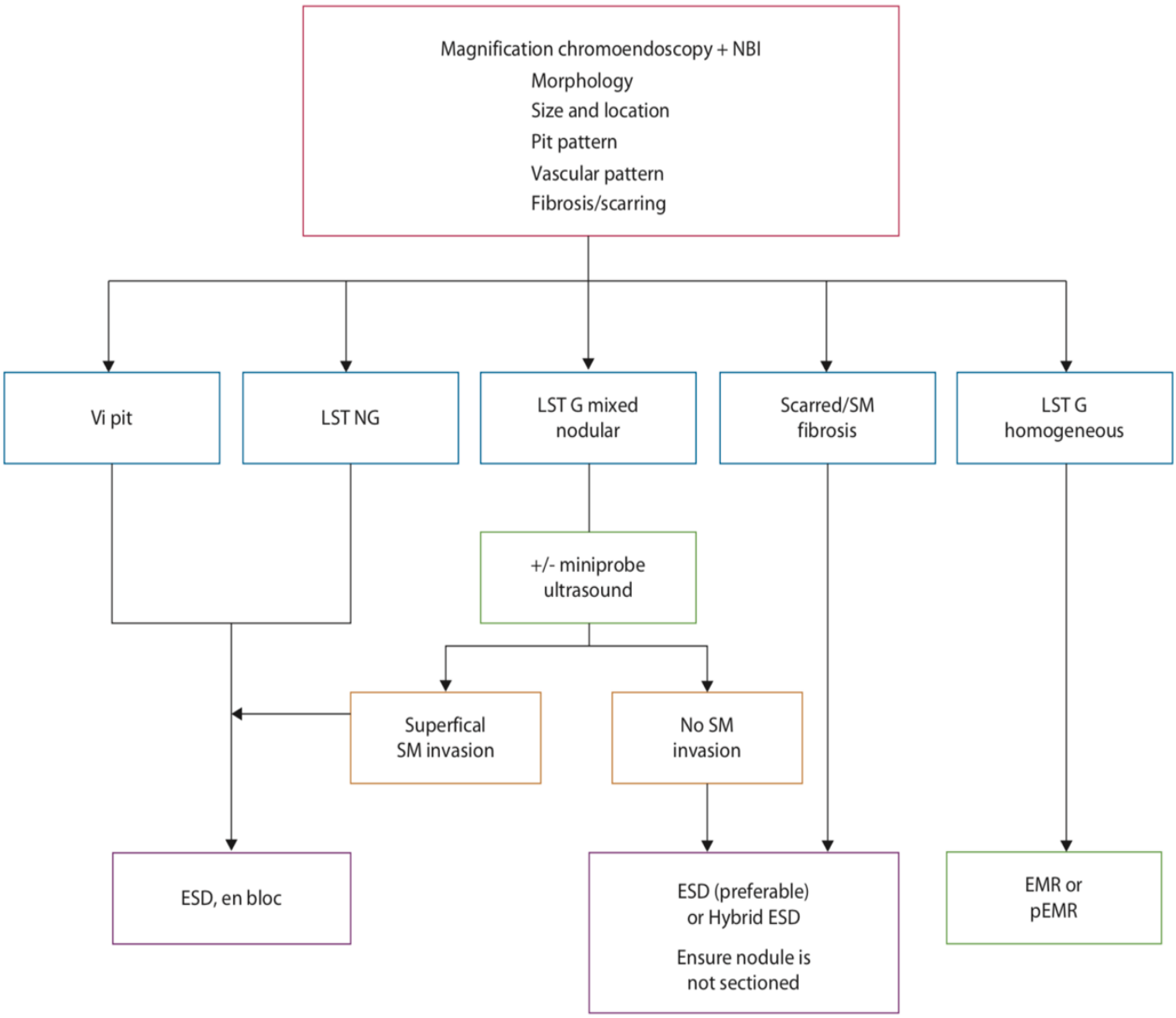
patients with the Vi pit pattern, LST granular mixed nodular type, and LST nongranular, because these lesions have a higher risk of submucosal invasive cancer compared with the LST granular-homogeneous type.

The V pit pattern can be further characterized and evaluated using chromoendoscopy with crystal violet. Vi irregular pit can be subdivided into low-grade (high-grade dysplasia) and high-grade (early submucosal invasion); Vn indicates nonstructured pits and is indicative of deep submucosal invasion. In our practice, high-frequency mini probe ultrasound (20 MHz) is utilized for patients with V pit pattern to ensure that the muscularis propria is not involved and that the submucosal plane is favourable before embarking on ESD. In rare occurrences, during the dissection, if the invasive cancer is deemed to have been understaged, we can embark on intermuscular dissection of the area of concern to ensure complete resection while preserving the mesorectum. In our experience, en bloc resection allows for curative endoscopic resection of adenocarcinoma with early submucosal invasion, because lymph node metastases are rare in adenocarcinoma with only superficial submucosal invasion or invading <1000µm from the muscularis mucosae[2,3]. In fact, several series have demonstrated that, in the absence of high-risk histopathologic factors including lymphovascular invasion, poor differentiation, or tumour budding, early colorectal cancer with only superficial submucosal invasion or invasion to a depth of <1000 µm is associated with a risk of lymph node metastases approaching 0%[4-11].

**FIGURE 1.** Process of lesion-specific selection of resection technique at King's College Hospital. EMR = endoscopic mucosal resection; ESD = endoscopic submucosal dissection; LST = laterally spreading tumors; LST G = laterally spreading tumors granular; LST NG = laterally spreading tumors nongranular; NBI = narrow band imaging; pEMR = piecemeal endoscopic mucosal resection; SM = submucosal.

*Diseases of the Colon and Rectum, 2021 Jan;64(1):21-23*

*(figure on next page)*




**References:**


1. Emmanuel A, Gulati S, Burt M, Hayee B, Haji A. Colorectal endoscopic submucosal dissection: patient selection and special considerations. *Clin Exp Gastroenterol.* 2017;10:121–131.

2. Saito Y, Fukuzawa M, Matsuda T, et al. Clinical outcome of endoscopic submucosal dissection versus endoscopic mucosal resection of large colorectal tumors as determined by curative resection. *Surg Endosc.* 2010;24:343–352.

3. Beaton C, Twine CP, Williams GL, Radcliffe AG. Systematic review and meta-analysis of histopathological factors influencing the risk of lymph node metastasis in early colorectal cancer. *Colorectal Dis.* 2013;15:788–797.

4. Choi JY, Jung SA, Shim KN, et al; Korean ESD Study Group. Meta-analysis of predictive clinicopathologic factors for lymph node metastasis in patients with early colorectal carcinoma. *J Korean Med Sci.* 2015;30:398–406.

5. Kitajima K, Fujimori T, Fujii S, et al. Correlations between lymph node metastasis and depth of submucosal invasion in submucosal invasive colorectal carcinoma: a Japanese collab- orative study. *J Gastroenterol.* 2004;39:534–543.

6. Tanaka S, Haruma K, Teixeira CR, et al. Endoscopic treatment of submucosal invasive colorectal carcinoma with special reference to risk factors for lymph node metastasis. *J Gastroenterol.* 1995;30:710–717.

7. Yasuda K, Inomata M, Shiromizu A, Shiraishi N, Higashi H, Kitano S. Risk factors for occult lymph node metasta- sis of colorectal cancer invading the submucosa and indications for endoscopic mucosal resection. *Dis Colon Rectum.* 2007;50:1370–1376.

8. Tominaga K, Nakanishi Y, Nimura S, Yoshimura K, Sakai Y, Shimoda T. Predictive histopathologic factors for lymph node metastasis in patients with nonpedunculated sub- mucosal invasive colorectal carcinoma. *Dis Colon Rectum.* 2005;48:92–100.

9. Belderbos TDG, van Erning FN, de Hingh IHJT, van Oijen MGH, Lemmens VEPP, Siersema PD. Long-term recurrence- free survival after standard endoscopic resection versus surgical resection of sub-mucosal invasive colorectal cancer: a population-based study. *Clin Gastroenterol Hepatol*. 2017;15:403–411.e1.

10. Yoshii S, Nojima M, Nosho K, et al. Factors associated with risk for colorectal cancer recurrence after endoscopic resection of T1 tumors. *Clin Gastroenterol Hepatol.* 2014;12:292–302.e3.

11. Yoda Y, Ikematsu H, Matsuda T, et al. A large-scale multicenter study of long-term outcomes after endoscopic resection for submucosal invasive colorectal cancer. *Endoscopy.* 2013;45:718–724.

# FAP and Desmoids

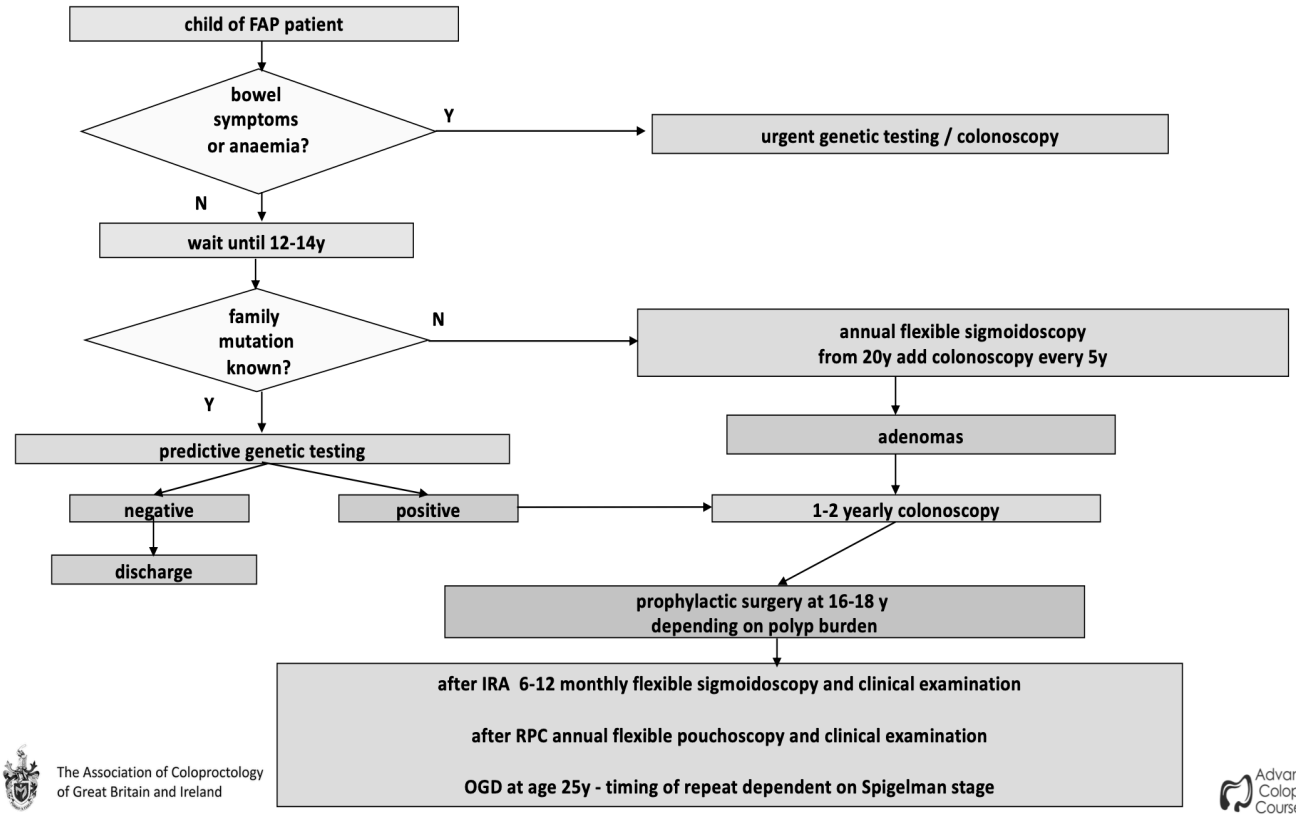

## Sue Clark

Consultant Colorectal Surgeon

St Mark's Hospital, London.


### Familial adenomatous polyposis

- Autosomal dominant
    - *APC* mutation identified in 90%
    - Genotype-phenotype correlation significant, and key in decision making
- About 1:10 000 of population
    - Should be managed in or discussed with a specialist centre
- Large bowel adenomas main feature
    - Usually > 100 by mid-teens
    - CRC risk nearly 100%



**Indications for RPC rather than IRA**

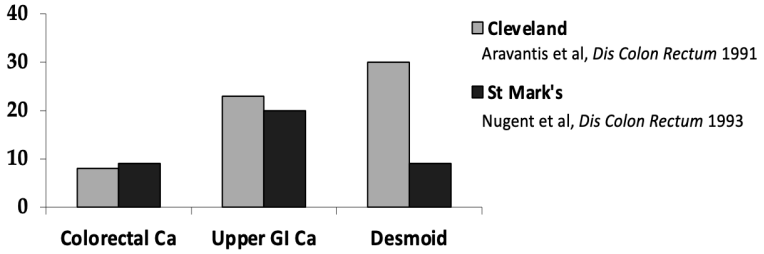
- *APC* mutation codon 1250-1450
- Dense polyposis
    - > 500 in colon or > 20 in rectum
    - Endoscopically unmanageable rectal polyp

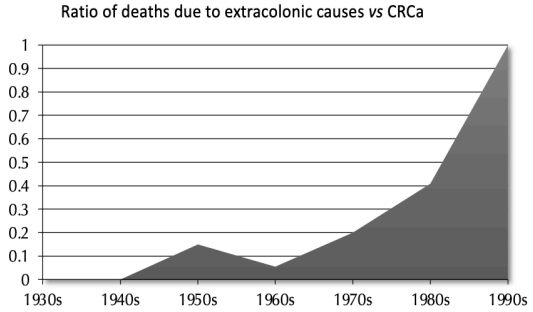
**Timing of bowel surgery for FAP**

- Urgently if real possibility of invasive disease
    - Confirmed / likely cancer
    - Carpeting adenomas
    - High grade dysplasia (other than isolated and completely excised)
    - Large adenomas

- Planned prophylactic
    - Very rare to develop cancer before age 20
    - Aim to minimise educational / social disruption
    - Surgery aged 16-18y if possible
        - younger if symptoms or concerning polyps
        - delay if at high risk of desmoid

# Cause of death in FAP patients






**Upper GI polyposis**

- Tailored surveillance from age 25y
- Aggressive treatment of severe disease before carcinoma develops

**Desmoid disease**

- Fibroblastic tumour / fibromatosis
    - Locally invasive / non-metastasising
- Rare
    - 90% sporadic : 10% in FAP
    - Occurs 10-15% of patients with FAP
    - 1000 x more common in FAP than general population

- Risk factors
    - FH
    - Mutation 3’ to codon 1400
    - Stimulated by trauma
        - Most present in 1-3 years following colectomy
        - Less desmoid if surgery delayed
- Abdominal wall
    - Watch or excise
- Intra-abdominal
    - Complications
        - Bowel obstruction / perforation
        - Ureteric obstruction
        - Can be misinterpreted as peritoneal / mesenteric LN cancer deposits
    - Management of intra-abdominal desmoid
        - In a specialist centre
            - Watch and wait
            - Avoid frequent CT
                - US annually to check for ureteric obstruction
            - Sulindac and raloxifene (toremifene / tamoxifen)
            - Cytotoxic chemotherapy
            - Excision / enterectomy
                - Small bowel transplantation

# Excising Nodes: can we improve outcomes?

**JT Jenkins**

Consultant Surgeon

St. Mark's Hospital- The National Bowel Hospital

*"Surgery for cancer is surgery of the lymphatic system"*- Lord Moynihan

Lymph nodes have long been regarded to be of central importance in the decision-making, treatment strategy and disease trajectory of colon and rectal cancer patients. Throughout the evolution of colorectal cancer staging systems, pathological involvement of lymph nodes has maintained prominence in prognostication and treatment planning; through Halsted, Moynihan, Dukes', Astler-Coller, eventually to the TNM classification and its multiple iterations. Moreover, it has been broadly assumed that where lymph nodes are histopathologically "involved" but are left behind after surgical intervention, then they will represent a source of disease recurrence, both loco-regionally and systemically; ultimately reflecting "under-treatment". In rectal cancer, we can extrapolate that histopathologically involved mesorectal lymph nodes [pN1/ N2] are associated with two to three fold increases in local recurrence [CR-07 @ 8 years]. In stage III disease, radiotherapy can significantly reduce local recurrence rates however, potentially incomplete surgical excisions [i.e in a non-mesorectal plane] have much higher local recurrence rates in stage III disease compared to complete [i.e a mesorectal plane] excisions with similar stage III disease [20% v 6%]. It is reasonable to then assert that radiotherapy does not compensate for incomplete surgery in the presence of involved lymph nodes and propose that their complete surgical removal may be a better solution.

The presumption that colorectal cancers follow a mechanistic step-wise sequence of metastatic propagation has gone relatively unchallenged until recently and relatively robust scientific endeavour now identifies that many colorectal cancers do not adhere to this dogma; indeed it appears that "traditional" models of metastatic spread apply only to a relative minority. Other studies highlight a substantially greater discordance between primary tumours and their lymph nodes metastasis than between the primary tumour and either lung or liver metastasis in relation to various phylogenetic markers. Other pathways therefore exist such as vascular spread and a greater understanding of colorectal cancer metastatic patterns will ultimately influence future management strategies. Additionally, the interesting relationships of nodal disease to metastatic disease patterns identified in large scale autopsy studies may also influence treatment paradigms. Nevertheless, nodal disease burden still reflects a poorer outcome overall.

At present, it is accepted that we should offer *en bloc* mesenteric lymphadenectomy with both colon and rectal cancer, completely removing the primary tumour, the regional lymph nodes with related blood supply; although this approach is contentious in early stage disease where accurate nodal disease risk prediction remains problematic, blunt and even with an abundance of statistical derivations, perpetually confusing. Deciding on whether lymph nodes are likely to be pathologically involved with metastasis in the absence of a detailed histopathological assessment of the tissue is extremely difficult and the modalities employed must use surrogates to guess the likelihood of "involvement". All systems remain entirely imperfect and in the current era, we rely heavily upon MRI for rectal cancer and CT for colonic cancer. Sensitivities and specificities for both modalities vary widely in the literature; the specific features used on imaging are also heterogenous across studies. Agreement with nodal histopathology findings is mostly dismal.

The currently topical areas in managing lymph nodes in colorectal cancer relate to management of nodal disease affecting the lateral pelvic sidewall [PSWLN] and the para-aortic territory. There is a significant dichotomy between East and West in how these disease sites are viewed and hence how there are treated. Whilst surgery with pelvic lymphadenectomy was performed in both East and West many years ago, morbidities incurred in the West prompted the approach to be abandoned in favour of radiotherapy, whilst in the East, the surgical approach used in a prophylactic manner was applied routinely. In the West, the presence of disease more proximal than the internal iliac has been regarded as metastatic whilst such distributions are classified as regional disease in the East. Over time the West has recognised a potential role for selective surgery [Lateral Lymph Node Dissection-LLND] and the East has considered a greater use of radiotherapy and more selective LLND for those stratified as being at higher risk of involved PSWLN [e.g. cT3/4 tumours; >10mm PSWLN on MRI]. There is a dearth of high quality evidence including randomised trials, but in one Japanese trial [JCOG0212] the addition of LLND to TME compared to TME alone, significantly reduced local recurrence rates [12.6% to 7.4%]; most prominently in the lateral pelvic sidewall but neither impacted upon disease-free nor overall survival. Moreover, in non-randomised data registry studies [e.g. Lateral Node Study Consortium], the response to radiotherapy, as viewed by persistence of PSWLN of a certain size [derived mathematically from such registry datasets] was associated with local recurrences that were frequently [>50%] isolated to the PSWLN, reflecting loco-regional disease only. Moreover, a practice of excising persistent PSWLN was associated with improved local recurrence rates although nodal sampling negatively affected local recurrence compared to a more complete LLND. Much work still needs to be done to establish how treatment response and PSWLN distribution should be treated and trials such as LaNoRec have been set up accordingly.

The role of para-aortic lymphadenectomy [PALND] is even more contentious as in general, it is viewed in the West as established systemic disease and hence not amenable to cure. It remains difficult to control disease in this area with the available non-surgical oncological treatment options. The success of more aggressive surgical approaches to hepatic and pulmonary metastatic disease has rejuvenated the debate on the potential role for salvage surgery for para-aortic disease. The reported studies include relatively few patients, are retrospective with heterogenous treatments and disease extents and suggest heavily biased selection criteria mostly reporting with no comparator groups. It appears that a highly selected group may derive benefit but as yet that group remains elusive. It has been proposed that disease below the renal vein and fewer that seven histopathologically positive PALN may afford a better outcome, although patients with much fewer positive nodes are likely to fare better in relative terms. Reports indicate that even after successful PALND, both systemic disease and local recurrence rates remain high. Whether an iterative process of complete surgical excision in “safer” cases is conducted and if local regrowth occurs in the absence of metastatic disease, then multimodality oncological therapy follows, is worthy of contemplation. More studies are needed and we must ensure that where surgical salvage opportunities exist, albeit rarely, that they are explored aggressively. These areas will be explored in more detail during the ACC.

# The Coloanal Anastomosis: Still living its' best life?

**Jim Tiernan**

Consultant Colorectal Surgeon

John Goligher Colorectal Unit, Leeds

## Introduction

The coloanal anastomosis (CAA) has become relatively rare in most units due to a combination of widespread stapler use and perhaps a shift in attitudes regarding stomas and post-operative bowel function. However, it remains important in specific scenarios and requires skill and experience, both technical and clinical.

## Summary

*Patient Selection*

Low anterior resection syndrome affects over half of patients undergoing complete TME surgery and the height of the anastomosis has been shown to be a factor associated with major LARS. Patient workup (history, clinical examination, investigation) and counselling are key to assessing the appropriateness of performing a CAA.

*Technical*

The CAA can be stapled if above the levator diaphragm but more often requires a hand-sewn technique from below. A detailed technical description will be given including diagrams, pictures and videos, with some tricks for success. There are various options when constructing the anastomosis to improve post-operative function, including, transverse coloplasty, colonic J pouch and side-to-end anastomosis). The deciding factor is often the length of colonic conduit available. The pros and cons of each will be discussed. Redo surgery is often the most challenging setting for a CAA and this will be explored, including the Turnbull-Cutait pull-through procedure.

*Function*

Functional outcomes depend on a multitude of factors and predicting this pre-operatively is difficult. The evidence for various scenarios will be summarized.

**Useful References:**


1. Bregendahl et al. Bowel dysfunction after low anterior resection with and without neoadjuvant therapy for rectal cancer: a population-based cross-sectional study. *Colorectal Disease 2013*.

2. Van der Heijden et al. Functuinal complaints and quality of life after transanal total mesorectal excision: a meta-analysis. *British Journal of Surgery 2020*.

3. Hou et al. Safety and efficacy of side-to-end anastomosis versus colonic J-pouch anasotmosis in sphincter-preserving resections: an updated meta-analysis of randomized controlled trials. *World Journal of Surgical Oncology 2021.*

4. Fazio et al. A randomized multicenter trial to compare lng-term functional outcome, quality of life and complications of surgical procedures for low rectal cancers*. Annal of Surgery 2007*.

5. Denost & Rullier. Intersphincteric resection: pushing the envelope for sphincter preservation. *Clinical in Colon and Rectal Surgery 2017*.

6. Biondo et al. Two-stage Turnbull-Cutait pull-through coloanal anastomosis for low rectal cancer. *JAMA Surgery 2020.*

# Molecular sub-types in colorectal cancer: implications for patient care.

**Jenny Seligman**

Consultant in Medical Oncology

University of Leeds

There are several methods to classify colorectal cancer according to molecular sub-types. These have relevance for patient care (prognosis and selection of therapy), clinical trial design and translational research. Classifications that have a current direct impact on patient care include presence of driver mutation (eg RAS, BRAF), mismatch repair status and primary tumour location. The relevance of these classification depends upon the clinical setting, for example presence of RAS mutation is only relevant in advanced colorectal cancer. Current use of markers are summarised in the ESMO Colorectal Cancer guidelines:

https://www.esmo.org/guidelines/gastrointestinal-cancers

Further classifications are not considered routine standard of care, but are currently being tested in prospective studies. For example, the use of ImmunoScore and circulating tumour DNA to offer superior prognostic information than TNM staging in early colorectal cancer and guide adjuvant chemotherapy decisions.

This talk shall summarise this data and discuss how it impacts decision making in colorectal MDTs.

# Surveillance of Complete Response

**Jared Torkington**

Professor of Colorectal Surgery

University Hospital of Wales Healthcare NHS Trust

In attempting to decrease local recurrence rates after rectal cancer surgery, radiotherapy became more regularly used in the neoadjuvant setting.

It became noticeable that some patients had no residual tumour present in the pathological specimen, a so-called pathological complete response (pCR).

This led to some surgical oncologists, headed by the visionary Professor Angelita Habr-Gama to postulate that if these patients could be identified before surgery as having no residual tumour then they could avoid the operation and its associated complications completely.

These patients with a so-called clinical complete response (cCR) have needed close monitoring to look for tumour regrowth, facilitating potential salvage surgery.

This talk will deal with

1) How to identify cCR
2) How to follow up cCR
3) How to talk to patients about cCR

**References:**

1. Conditional recurrence-free survival of clinical complete responders managed by watch and wait after neoadjuvant chemoradiotherapy for rectal cancer in the International Watch & Wait Database: a retrospective, international, multicentre registry. Fernandez et al *Lancet Oncol* (2021) 22:43-50

2. Oncological and survival outcomes in watch and wait patients with a clinical complete response after neoadjuvant chemoradiotherapy for rectal cancer: a systematic review and pooled analysis. Dattani et al (2018) *Ann Surg 268* (6): 955-967