

# Principles of Surgery - Ano rectal region: Haemorrhoids

## Maurice Brygel

Director, Melbourne Hernia Clinic ([www.hernia.net.au](http://www.hernia.net.au))  
Fellow, Royal Australian College of Surgeons (RACS)

## Correspondence

Maurice Brygel  
Australia

**Email:** [mbrygel@netspace.net.au](mailto:mbrygel@netspace.net.au)

### Introduction to Brygel's SURGISKILLS

This series in MEJFM reflects my experiences as a surgeon and the problems I have encountered over many years performing, photographing, videoing and teaching surgery in the office. Here I am attempting to impart some of the knowledge I have learned in a practical rather than theoretical sense. This is my approach to the issues I have confronted in my role as an educator and in designing and conducting surgical office skills workshops in skills laboratories throughout Australia and internationally. These have been on behalf of the Royal Australian College of Surgeons, Monash University, Queensland University and many private organizations including those associated with rural medicine and international medical graduates (IMG). In Australia this comprises up to 25% of the primary care workforce.

This series on anorectal conditions commences initially with the basic anatomy and physiology, leading then into the clinical conditions commonly encountered in general practice.

The topic could be called **faeces, flatus and fluid** because the anal canal controls all these aspects by a complex neuromuscular mechanism. Damage to this causes incontinence to either or faeces, flatus and fluid. Surgeons always have this in mind as disruption resulting in any of these can lead firstly to distress to the patient but also commonly litigation.

Symptoms, include pain, swelling, bleeding discharge and even change in bowel habit. With history and examination a definitive diagnoses can usually made and appropriate treatment instituted. This gives satisfaction to the proctologist despite this appearing an unpleasant field to work in. It is a sensitive area to the patient and they may complain about certain aspects. Thus it is our practice to have an explanatory sheet about the examination process.

Many interpret any symptom in this region as HAEMORRHOIDS, but the process will differentiate the conditions of:

FISSURE, ABSCESS, FISTULA, POLYP, PROLAPSE

This presentation is on haemorrhoids. Subsequently the other subjects will be dealt with.

It is important to realize that this region transitions from an autonomic nerve supply for smooth muscle above the pectinate line to a somatic nerve supply for striated muscle below this line. This has implications in treatment and why haemorrhoids can have a rubber band applied without severe pain if they are not thrombosed. The band must be applied above the dentate line.

### Principles of Surgery - Ano rectal region



**Image attribution :** Eizenberg et al 'Anatomeia' © Anatomeia Publishing P/L Melbourne 2003 ISBN 0-734-2691-9

**Anatomy of the region**

The Ano rectal region is a transitional zone from normal skin to mucosa.

Note the clinical significance of the upper & lower parts of the anal canal in terms of:

**Lining**

mucosa above, adenoma or adenocarcinoma, Squamous below, squamous cell carcinoma or melanoma

**Nerves**

Above the dentate line - sensory and motor to parasympathetic hypogastric plexus  
 Below the dentate line

Sensory & motor - pudendal nerve

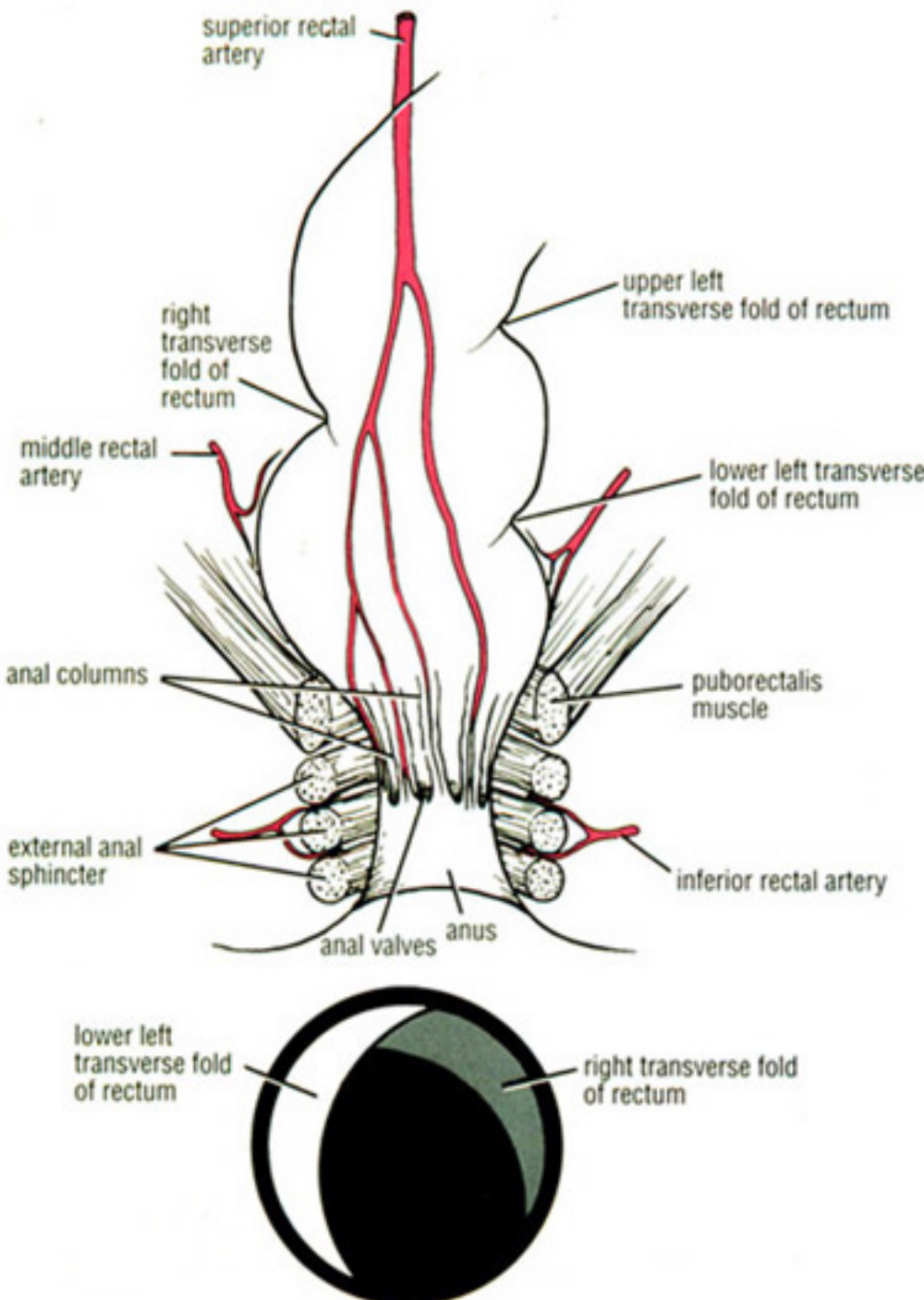
**Lymphatic drainage**

- to internal ilia above,inguinal groin below

The anal canal contains sensory nerves. Above the pectinate line visceral afferents accompany parasympathetic nerves. Below the pectinate line, somatic afferents are in the pudendal nerve.

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**Anal canal - arterial supply**

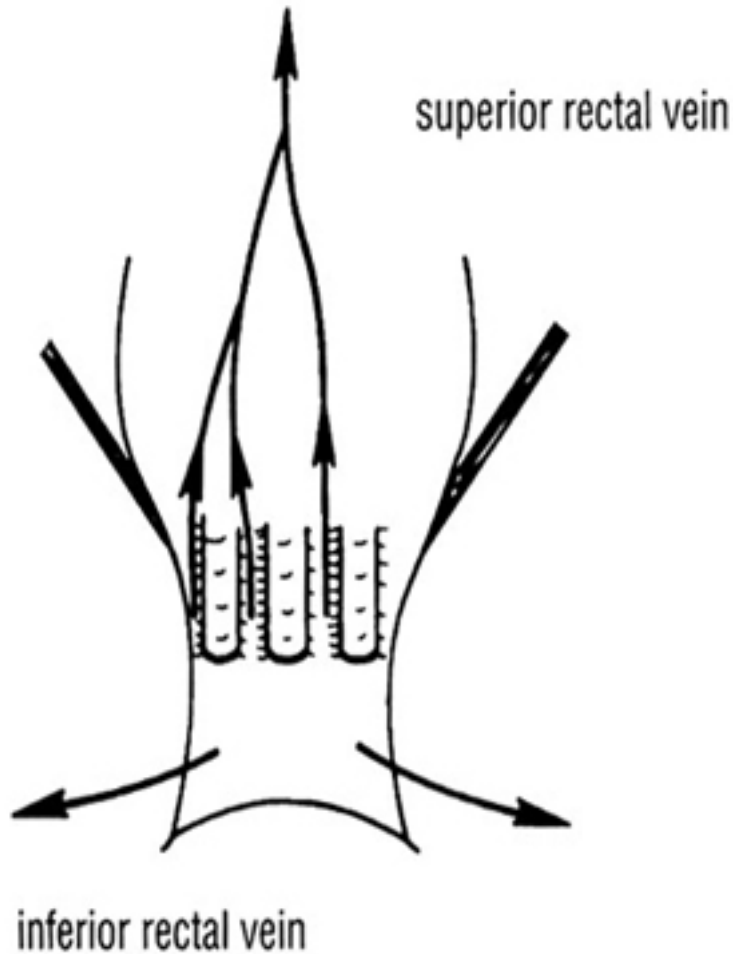


**Image:** Richard Snell, 'Clinical Anatomy for medical students' 5th ed. fig 7.4 Little, Brown & Co 1995 ISBN 0-316-80135-6

Arterial supply to mucosa above the pectinate line, is via the superior rectal artery (direct continuation of inferior mesenteric artery) and to mucosa below pectinate line via the inferior rectal artery (branch of internal pudendal artery).

**Note:** anastomosis across pectinate line and middle rectal artery (branch of internal iliac artery) supplies muscle wall only.

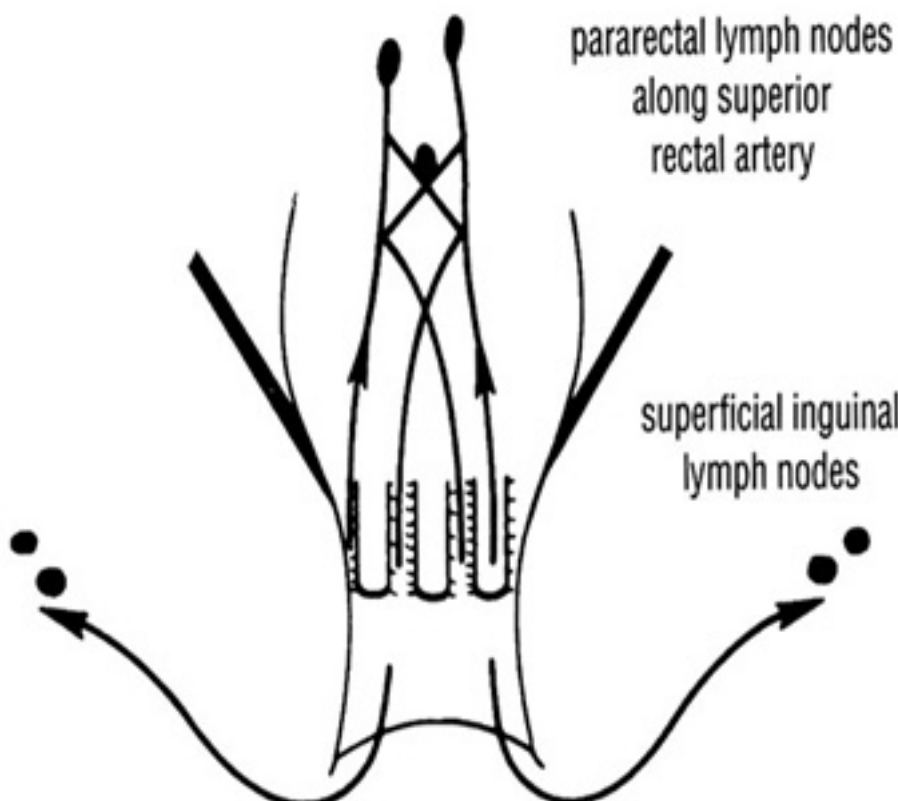
## Venous drainage



**Image:** Richard Snell, 'Clinical Anatomy for medical students' 5th ed. fig 8.7c Little, Brown & Co 1995 ISBN 0-316-80135-6

Venous drainage above the pectinate line is via the superior rectal vein (drains to portal system via inferior mesenteric vein) and below the pectinate line via the middle and inferior rectal veins (drains to systemic system via internal iliac vein).

Note communications between these veins form an important portal-systemic anastomosis.

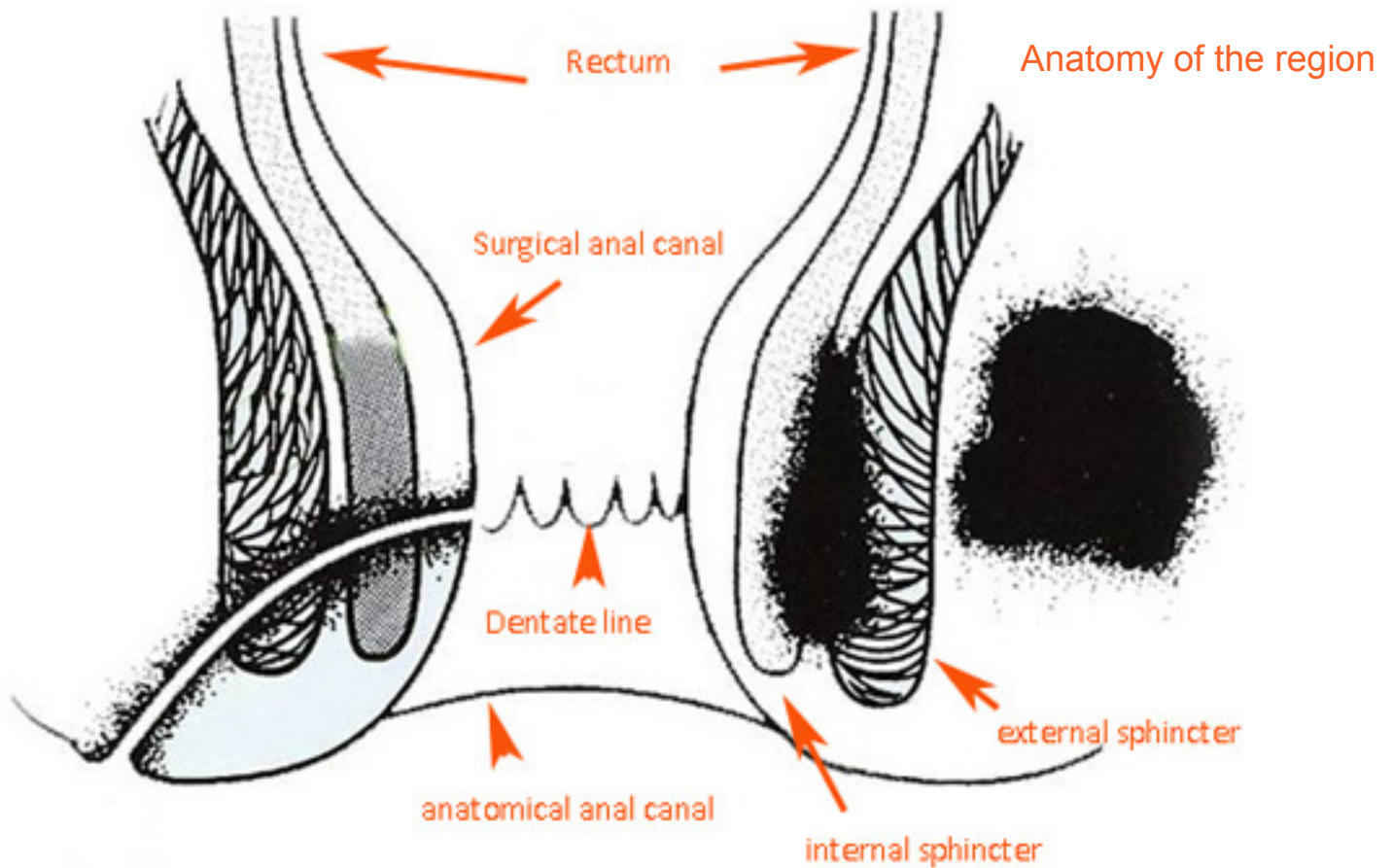


**Image:** Richard Snell, 'Clinical Anatomy for medical students' 5th ed. fig 8.7d Little, Brown & Co 1995 ISBN 0-316-80135-6

Mucosa above the pectinate line drains to inferior mesenteric nodes and below the pectinate line drains to superficial inguinal nodes (medial group).

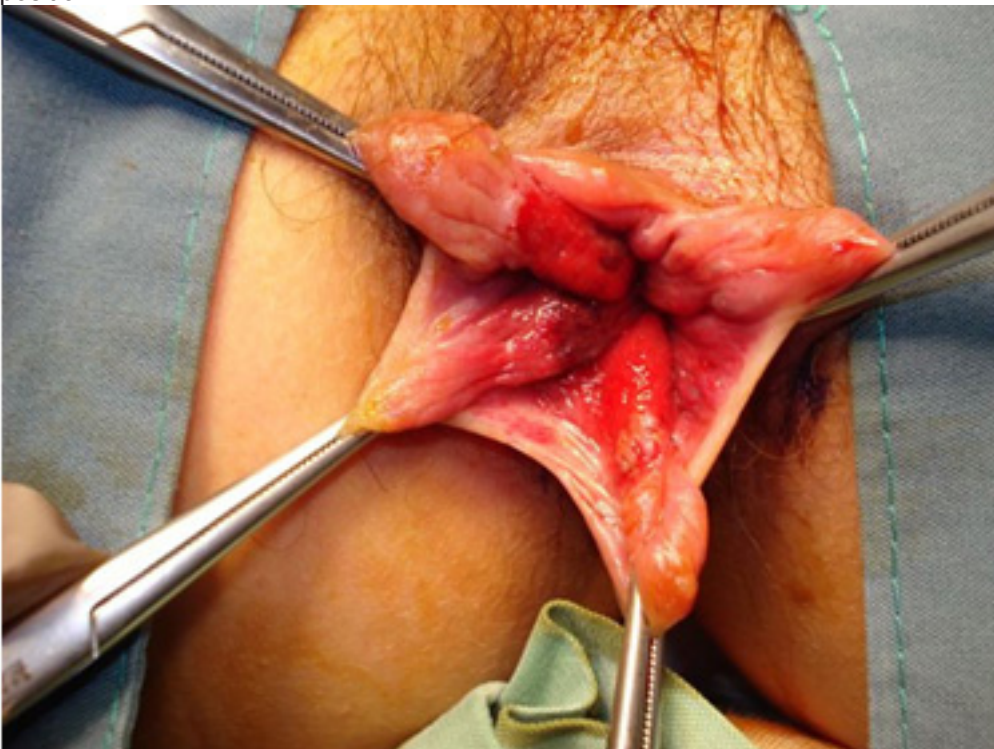
Thus if there are nodes in the groin, either inflammatory or neoplastic the anal region must be examined

Note this area is both in the midline and a junctional zone (between endoderm and ectoderm) where lymphatics communicate. It is therefore a significant watershed area of lymph drainage.



## Haemorrhoids

Diagnosis of haemorrhoids is made from patient history of bleeding and confirmed by physical examination (type of bleeding and protrusion). Haemorrhoids are typically 3,7,11 o'clock positions with the patient viewed in the left lateral position.



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### Significance of type of haemorrhoids

Different treatments are available depending on the type of haemorrhoid:  
 types 1 & 2 conservative treatment, injection or rubber band ligation  
 types 3 & 4 usually require surgery

## Examination



This shows the haemorrhoids in the 3,7,11 o'clock position. They are thrombosed. The largest in the left lateral position is ulcerated. With surrounding oedema. They are not suitable for banding as below the dentate line.

Surgery in severe cases may be delayed to allow swelling to settle. This makes surgery simpler and reduces the risk of removing too much skin & mucosa causing anal stenosis.

Examination involves inspection, palpation, proctoscopy, sigmoidoscopy.

The anal margin is inspected and the patient asked to strain. This may actually cause the haemorrhoid to protrude. Other protrusions could be a prolapse or polyp.

Rectal examination may feel the haemorrhoidal cushions. You may even be able to prolapse a polyp. With proctoscopy you can assess the haemorrhoids as the patient strains.

Sigmoidoscopy will rule out higher lesions.

**Image attribution :** Maurice Brygel © Melbourne Hernia Clinic 2007

### Haemorrhoids - staging

A guide to severity and preferred treatment

**Stage 1** - Bleed, particularly at the toilet - the blood may drip or splash into the bowl or colour the toilet paper. If mixed with the stools suggest this is from a higher lesion.

**Stage 2** - Prolapse - usually with straining of the bowels. They return inside spontaneously

**Stage 3** - or need to be pushed back inside.

**Stage 4** - Thrombose and prolapse - this is very painful and the haemorrhoid cannot be returned inside - not suitable for banding and surgery may be required.

Perianal haematoma - A different problem



### Rubber Band ligation for Haemorrhoids

Banding has many advantages over the haemorrhoid operation. However not all haemorrhoids are suitable for rubber band ligation.

This is a simpler office or room's treatment for haemorrhoids as opposed to surgery. No anaesthetic is required and the patient is able to go home almost immediately. There should be minimal pain following. There is minimal time off work. More than 1 session may be required for large haemorrhoids.

The main serious but uncommon complication is secondary haemorrhage, a complication common for all anal procedures.

With surgery, Hospitalization and General anaesthesia is usually required. The post operative course is often very painful. However permanent cure is usually achieved. The use of a local anaesthetic block or infiltration helps avoid one of the side effects of acute retention of urine. This is because there is less pain.

I actually perform many anal or haemorrhoidal procedures in the office under local anaesthesia because patients cannot get into hospital.

### Demonstration of rubber band application

## Injection with phenol

Phenol in almond oil is injected just above the haemorrhoid through a proctoscope. The inflammatory response occluded the veins. The main risks are tissue necrosis, and prostatitis if injected into prostate. Secondary haemorrhage 7-10 days later may occur. Some prefer this to banding.

## Differential diagnosis - perianal haematoma

**Perianal haematomas** are quite a common, very painful condition. They may occur following straining at the toilet. They are called a "five day wonder" because they usually resolve within five days.

They occur because of rupture of the perianal venous plexus.

A perianal hematoma is easily recognized by its position just outside the anal verge. It is usually well circumscribed and has a bluish appearance. It is quite regular in shape just like a little marble. It is tender to touch. This perianal lump should not be confused with a thrombosed internal external hemorrhoid. They do sometimes however coexist together. Attempted drainage of a thrombosed internal external hemorrhoid by incision will only aggravate the problem so it is important to distinguish the two. This is usually done by looking at the appearance and position.



They can be treated with analgesia and sitz baths. Creams or gels can also be applied. For example a 2% lignocaine jelly. However many do require surgery as the symptoms continue.

They are very painful. For this reason surgery is often undertaken. Another reason to operate is because they rupture and bleed and thus become messy and unhygienic.



**Anal tag - sentinel pile hiding mid line posterior fissure**

## Procedure

At the first visit a rectal examination with a glove is performed. Then the bowel above the haemorrhoids is examined with a sigmoidoscope to exclude other causes of bleeding from the bowel. In patients over 45 a colonoscopy may need to be arranged to ensure no other cause for the bleeding is present.

The surgery can be carried out in the office quite simply by those experienced at it. This is done under local anaesthetic using lignocaine with adrenaline. The area is infiltrated directly with just a few CC. A small incision will allow the hematoma to be evacuated. To control any bleeding and to keep the wound open a small pack is inserted. Suturing is not required. The patient actually keeps their underwear on during the procedure so that the dressing does not dislodge as they get up. . A pad is placed on the dressing to prevent any ooze and the underwear pulled up .The pain usually is relieved quickly although painkillers may be used for a day or two.. . The patient is told to have a bath or shower the following day.The pack falls out and the wound heals spontaneously by what is termed healing by second intention. are They instructed to apply pressure if there is any unusual amount of bleeding. Review is not mandatory.

### **Injecting the local anaesthetic.**

A fine 25 gauge needle is used to reduce the pain. This is not injected directly into the haematoma as this causes further pain due to increased tension.

Injection directly into the overlying epidermis gives immediate anaesthesia.

Once the incision is made further local can be injected into the depths of the wound.

### **Incision**

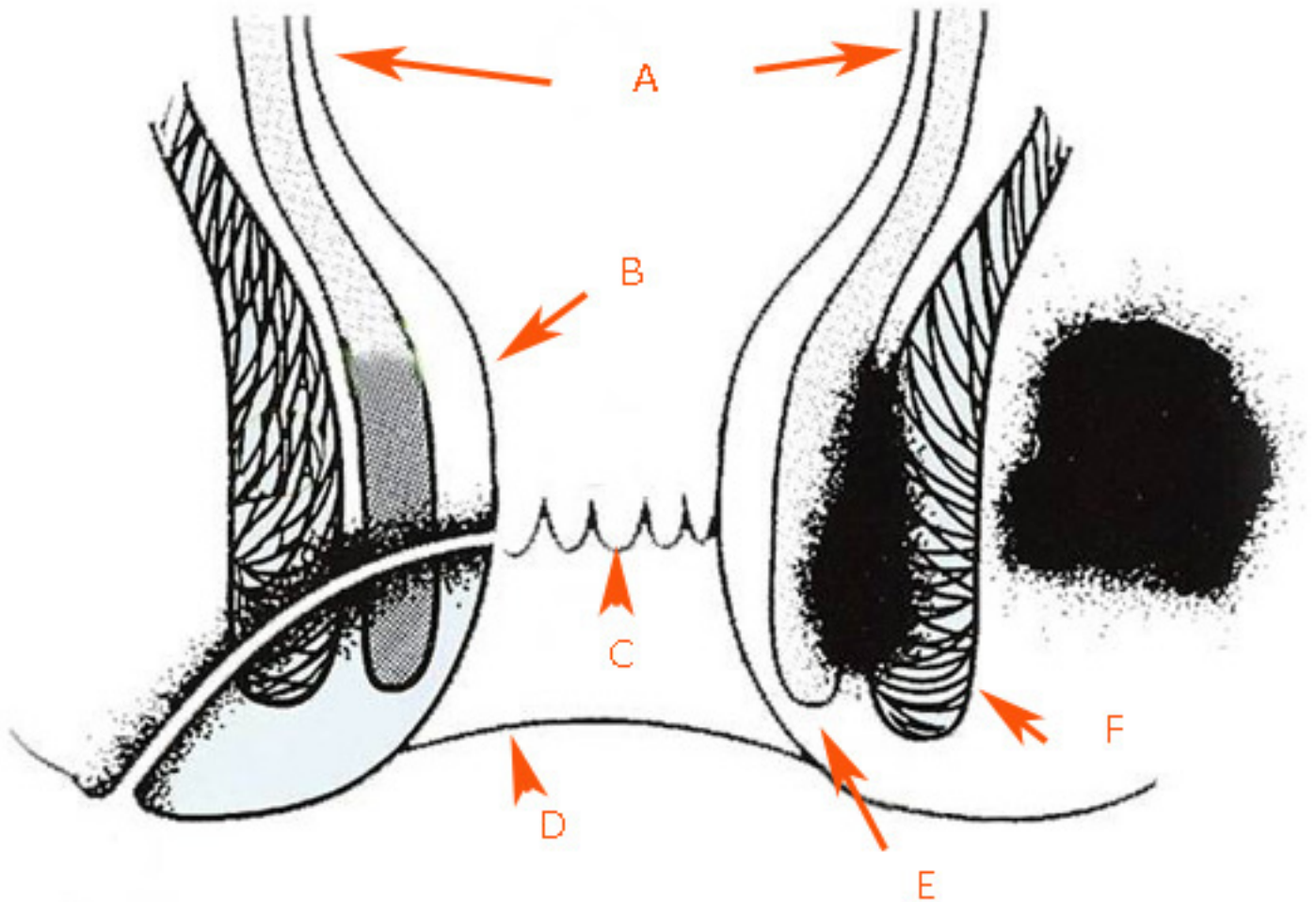
This is made in a radial direction in the skin crease. Some would use a cruciate incision as this does not close as rapidly. However I believe this gives an irregular scar which can be lumpy and sensitive.

## Serious haemorrhoid presentations



Thrombosed gangrenous haemorrhoid with oedema

Quiz



Name the features A-F. Answers can be found on page 30.

**Risk Management**

The risk management here is to:

- a) Establish a diagnosis,
- b) Recommend treatment.

Not all haemorrhoids require surgical intervention and alternative treatments for each problem should be offered.

It should be remembered for any anal procedure that the post-operative recovery can be very painful particularly if a complication occurs. Thus the patient needs to be adequately warned about the possibility of pain and the possibility of fainting with pain or due to psychological responses.

**Conclusion**

Thus for any anorectal condition a diagnosis can usually be readily established.

- a) Establish a diagnosis,
- b) Recommend treatment.

Not all haemorrhoids require surgical intervention and alternative treatments for each problem should be offered.

It should be remembered for any anal condition gentleness is required while establishing the diagnosis. Also for any procedure that the post-operative recovery can be very painful particularly if a complication occurs. Thus the patient needs to be adequately warned about the possibility of pain and the possibility of fainting. Many haemorrhoid problems can be treated surgically in the office. This will be demonstrated in future in Brygels SURGISKILLS.

The next issue will feature Anal Abscess and Fistula.



## References

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