ANAL FISTULA
An anal fistula is a communicating tract between the inner anus or rectum and the external skin surrounding the anus. It begins as a superficial ulcer (Figure 1), that becomes infected creating an anal abscess that subsequently bursts leaving a communicating tract between the internal anus and the external skin of the perianal region. It causes a chronic discharge of pus that typically has an offensive odour.

Figure 1. An anal fistula, with internal defect communicating with an external defect.

TYPES
A perianal fistula can be short and superficial, not involving the anal sphincter (submucosal fistula) or can be long and deep, involving the just the internal anal sphincter (intersphincteric fistula) or both anal sphincters (transphincteric fistula or extrasphincteric). Most fistulae are low arising from low within the anal canal. Rarely fistulas are high, arising from above the anal canal (supralevator fistula).

SIMPLE FISTULAE
Simple fistulae are those with a single tract that involves less than 30-50% of the external anal sphincter. The preferred treatment of a simple fistula is to lay it open [1]. This is a small operation under general anaesthetic, in which a probe is placed in the fistula, and the overlying skin cut to allow the tract to heal as a shallow ulcer.

COMPLEX FISTULAE
Complex fistulae, are those with multiple tracts, those that involve more than 30-50% of the external sphincter, those that involve the anterior half of the anus (in women), any fistula as a result of radiation or Crohn’s disease, and those arising in someone with already compromised sphincter function (i.e. weak anal tone prone to incontinence). These cannot simply be laid open, and often the first step is to control the sepsis by inserting a seton (figure 2).
CAUSE
Anal fistulae result when an anal abscess bursts into the tissues surrounding the anus. This condition is common in young adults, but can occur at any age. The reason why some people develop a fistula, and others don’t is not known. Smoking and Crohn’s disease have both been shown to increase your risk of developing a fistula. The success of surgery for the treatment of fistulae due to Crohn’s disease or in the smoker is considerably lower than for other fistulas. Infliximab infusions have been shown to increase the success of fistula closure in Crohn’s disease [2].

SYMPTOMS
A chronic discharge of malodourous pus from the perianal region is the usual feature of an anal fistula. This often followed a period of intense perianal pain that coincides with the time of abscess formation.

INVESTIGATION
The diagnosis is made clinically, and confirmed by an Examination Under Anaesthesia (EUA), where a probe is gently inserted into the fistula tract to confirm a communication between the outside perianal skin and the internal lining of the anal canal. Occasionally Endo Anal Ultrasound (EAU) or Magnetic Resonance Imaging (MRI) are needed to determine the number and direction of fistula tracts, and to determine the amount of muscle sphincter involved prior to any planned surgery.

COURSE
The initial management of a fistula is to drain it. This is a small surgical procedure performed under general anaesthetic where a silastic seton (similar in size and consistency to a rubber band) is passed through the fistula tract and tied in place. This allows any pus to drain, and inflammation to settle. A course of antibiotics may also be required. Within 6 weeks, the condition should be much improved, and you will need to be re-examined by a colorectal surgeon. There are 5 options at this point which include:

1. remove the seton
2. leave the seton in place awhile longer;
3. remove the seton and lay open the tract;
4. remove the seton and remove the fistula tract with or without a flap repair; or
5. remove the seton and use glue or a plug to seal the tract.
1. REMOVE THE SETON
If the seton has been in for more than 6 weeks, and the infection has settled, simply removing the seton has been shown to be effective in up to 75-80% of cases [3,4]. The success following simple removal of the seton is reduced to less than 50-60% for patients with Crohn’s disease [5].

2. LEAVE THE SETON IN PLACE AWHILE LONGER
If the fistula tract involves the anal sphincter, it may not be safe to lay open the fistula tract, as that would involve cutting the anal sphincter, and this could potentially result in some degree of faecal incontinence. Therefore, the seton may be left in place awhile longer. This ensures further drainage of any abscess and settling of inflammation. Sometime a loose seton is re-tightened until it is snug. With repeated tightening, the seton slowly lays open the fistula tract, with the seton eventually falling out on its own without need for incising the anal sphincter. This slow process can take up to a year, but is safer for the anal sphincter, as the sphincter has time to heal and repair itself as the fistula tract is slowly laid open[6].

3. REMOVE THE SETON AND LAY OPEN THE TRACT
If the seton involves less than a third of the internal anal sphincter, then it may be reasonable to remove the seton by laying open the fistula tract. This allows cleaning (curetting) of the fistula tract, to promote its healing.

4. REMOVE THE SETON AND REMOVE THE FISTULA TRACT WITH OR WITHOUT A FLAP.
If the seton involves a large amount of anal sphincter, the seton may be removed, and a formal excision of the fistula tract performed. This may involve simple ligation and excision of a portion of the fistula tract, without the use of a flap (i.e. LIFT procedure) or may involve excision of the entire length of fistula tract followed by a formal flap repair to cover the internal opening. If the internal opening is high in the anal canal a rectal advancement flap is performed using a flap of mucosa and the underlying muscle to cover the internal opening. If the internal opening is low in the anal canal, an anoderm V-Y advancement flap may be preferable. Both these flap repairs also involve repairing the sphincter, and cleaning (curetting) the external opening to allow ongoing drainage until the repair has healed.

5. REMOVE THE SETON AND USE GLUE OR A PLUG TO SEAL THE TRACT
A vast number of plugs and glues have been used to try to seal fistula tracts. The benefit of these techniques is that they preserve the anal sphincters.

Initial results with fibrin glue were promising. Several products are commercially available and treatment involves single or repeated injection into the external opening.

Initial studies were promising with healing rates of up to 70% with no studies reporting impairment of continence. However more recent studies looking at long-term healing rates show disappointing recurrence rates as high as 75% [7].

The fistula plug is made of collagen. Initial results were encouraging with high success rates [8]. However, long-term results are disappointing, with failure rates as high as 70-80% [9-10]. Therefore a selective approach is recommended, with only some fistulae suitable for plugs.
There is some evidence suggesting that long tracts greater than 4cm in length are more likely than short tracts to heal with these techniques [11].

WHAT TO EXPECT PRE AND POST OPERATIVELY FOLLOWING ANAL FISTULA SURGERY

Fasting & Bowel Preparation
Unless you are also having a colonoscopy, a normal diet without bowel preparation, is required the day before surgery. You need to fast from midnight the night before if your surgery is scheduled for the morning, or from 7am if scheduled for the afternoon. You will be admitted as a day-stay procedure. You will receive a fleet® enema 1 hour prior to your operation.

Recovery & transport
Following your procedure, you will recover for an hour until the effects of sedatives have worn off. You should not drive yourself home after your procedure and should have someone organised (a friend or relative) to accompany you.

Bleeding
Spotting of blood or persistent minor oozing will occur for 5 days following you procedure, and a sanitary napkin changed once to twice daily will be needed to prevent staining of your underwear. Bleeding will typically occur after opening your bowels. If the bleeding is more than a couple of teaspoons a day, notify your surgeon.

Laxatives
You should remain on regular laxatives and simple analgesics for 1 week. A tablespoon of natural psyllium husk (Metamucil® or Fibogel®) twice daily, and 30ml of lactulose (Duphalac®) once to twice daily is recommended.

Pain control
For pain, a non-steroidal is recommended such as 400mg of ibuprofen (Brufen®) along with 2 tablets of paracetamol. This should be taken regularly three times a day for five days. Opioid medications (Endone) may sometimes be needed, but should be used sparingly as they cause constipation.

Antibiotics
After discharge from hospital you may require antibiotics to treat ongoing infection. Oral cephazolon (Keflex®) and metronidazole (Flagyl®) may be needed for 5 days (provided no allergies exist).

Dressings
Occasionally you may be sent home for daily dressings for up to a week, which is often performed by a community nurse or your local general practitioner. A thin silastic Seton may be inserted into your anal fistula this. This is about the size and consistency of a rubber band and is passed through the tract of the fistula to allow ongoing drainage of the abscess. It is typically tightened or removed at 6 weeks.

Sitz baths
Twice daily warm to hot salt water (Sitz) bathing to the anal region is soothing and antiseptic, and should be done for 1 week following your procedure. Put a handful of salt into a shallow bath of warm-to-hot water and sit there for 10-15 minutes.

Follow-up
You should follow up with your colorectal surgeon in 6 weeks following your surgery to review your wound and discuss further management if indicated.

References
1. Williams JG, Farrands PA, Williams AB, Taylor BA, Lunniss PJ, Sagar PM, Varma JS, George BD. The Treatment of Anal Fistula: ACPGBI


