colorectal clinic
肛肠外科
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## missionstatement

**To provide the highest quality and state of the art cutting edge surgical care for patients with diseases of the colon, rectum and anus.**


Colorectal Clinic @ NUH
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**Operating Hours:**
**Mon to Fri: 0830h to 1800h**

The Colorectal Clinic at NUH offers specialist care for the complete range of colorectal disorders. We have a multidisciplinary team of specialist colorectal surgeons, medical oncologist and radiotherapists providing comprehensive care for colorectal cancers. We are able to utilize our 3D endorectal ultrasound equipment to accurately assess tumors and focus on sphincter preserving surgery for patients with low rectal cancers. We also offer the modern option of minimally invasive/laparoscopic colorectal surgery. With the aid of our own pelvic floor laboratory equipped with state-of-the-art diagnostic tools, our dedicated team of specialist surgeons can investigate functional bowel disorders like constipation and faecal incontinence and also offer advanced therapy like artificial bowel sphincter implantation and sacral nerve modulation. We also provide expert non-invasive treatments like fibrin glue anal fistula and a one-stop CARET service for hemorrhoids and fissures.

The Colorectal Clinic @ NUH is currently the only unit in Singapore with two female colorectal specialists. Colorectal Clinic @ NUH is part of University Surgical Centre.


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such as fistulography and magnetic resonance imaging are available to further delineate 'difficult' and complex recurrent anal fistula.

Pre-operative assessment of the anal sphincter function is not generally required. However, it may be useful as an adjunct to planning operative approach in patients with recurrent fistula, women with previous obstetric trauma and elderly patients. Resting and squeezing anal pressure can be measured pre-operative to aid in the discussion and planning of the management of 'difficult' anal fistula.

## Principles of Management

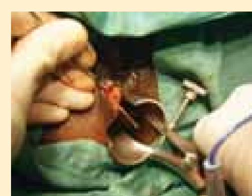
The general principles of fistula management are to:

1. Eliminate the fistula
2. Prevent recurrence
3. Preserve anal sphincter function

### Surgery

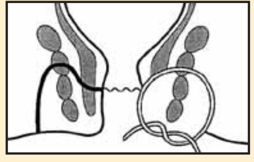
Surgery is the mainstay of management of anal fistula. The role of medical management is mainly in the usage of antibiotics to treat recurrent low grade infection associated with the anal fistula especially in patients with immunocompromised medical conditions (eg. diabetes mellitus).

There are several surgical methods used in the eradication of the fistula tract and the option depends on the type of fistula tract present.



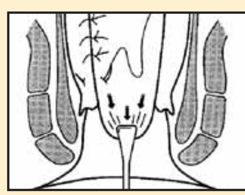
*Lay Open Technique*

1. Lay-Open Technique – This is the most common procedure for simple anal fistula (low intersphincteric or transphincteric fistula). The tract is incised to deroof it to allow adequate drainage for secondary healing to take place.
2. Seton – A seton is a foreign material inserted into a fistula tract to encircle the anal sphincter muscles. It is used to treat high anal fistula whereby simple lay-open method might render the patient incontinent.
3. Fistulectomy – The fistula tract is totally excised upto the anal sphincter muscle complex leaving the wound for secondary healing.



*Seton Insertion*

4. Anorectal Advancement Flap – This is a more complicated technique used when the conservative laying-open method is not appropriate eg. in anterior fistulas in women, high complex fistulas and previous multiple anal sphincter surgeries. The internal opening is excised and then closed with a full-thickness flap of rectal mucosa.
5. Fibrin Glue – This is a non invasive approach whereby the fistula tract is closed using fibrin glue.



*Anorectal Advancement Flap*



6. Bioprosthetic Fistula Plug – This is a relatively new technique using a bioprosthetic plug to close by plugging the fistula tract. However, results are equivocal and cost are high.

### Post Operative Care

After surgery, patients are advised to take a high fibre diet with plenty of fluid. They are prescribed stool bulking agents, stool softener and analgesia. Patients are instructed to take frequent sitz baths to ensure perianal hygiene. Daily wound dressing at nearby clinics are usually required in the first week after surgery.

(Sitz bath – Please refer to previous Colorectal Clinic S-files Volume 1 Issue 2 Dec 2006)

### 'Difficult' Fistula and Recurrent Fistula

These fistulas are best managed by specialists to ensure the best possible outcome. The risk of complications arising from the management is high. It is prudent to ensure thorough pre operative assessment to delineate all the tracts and cavities, study the anal sphincter bulk and function to plan the most ideal surgical option.

### Prevention

As mentioned earlier, the formation of the anal fistula is totally unpredictable. The only way to prevent the disease is to reduce the incidence of infection of the anal glands which is the precursor of anal fistula. Good perianal hygiene is an important step to prevent this uncomfortable condtion.

## Anal Fistula in a nutshell

1. Anal fistula is a chronic infection of the anal glands in the anal canal.
2. Majority of the anal fistula is 'simple type' and easy to treat.
3. Anal fistula must be assessed thoroughly by a surgeon to plan the most optimal management to prevent recurrence and reduce risk of complication.
4. Recurrent anal fistula should be evaluated by an experienced Colorectal Surgeon with adjunct investigations eg anal manometry and endoanal ultrasonography before deciding on the appropriate therapy.

## Reference


1. Ho Y-H et al. Randomized controlled trial of primary fistulotomy with drainage alone for perianal abscess. Dis Colon Rectum 1997;40:1435-1438
2. Parks AG, Gordon PH, Hardcastle JD. A classification of fistula-in-ano. B J Surg 1976;63:1-12


## Coming Soon!

Irritable Bowel Syndrome by Dr Aileen Seah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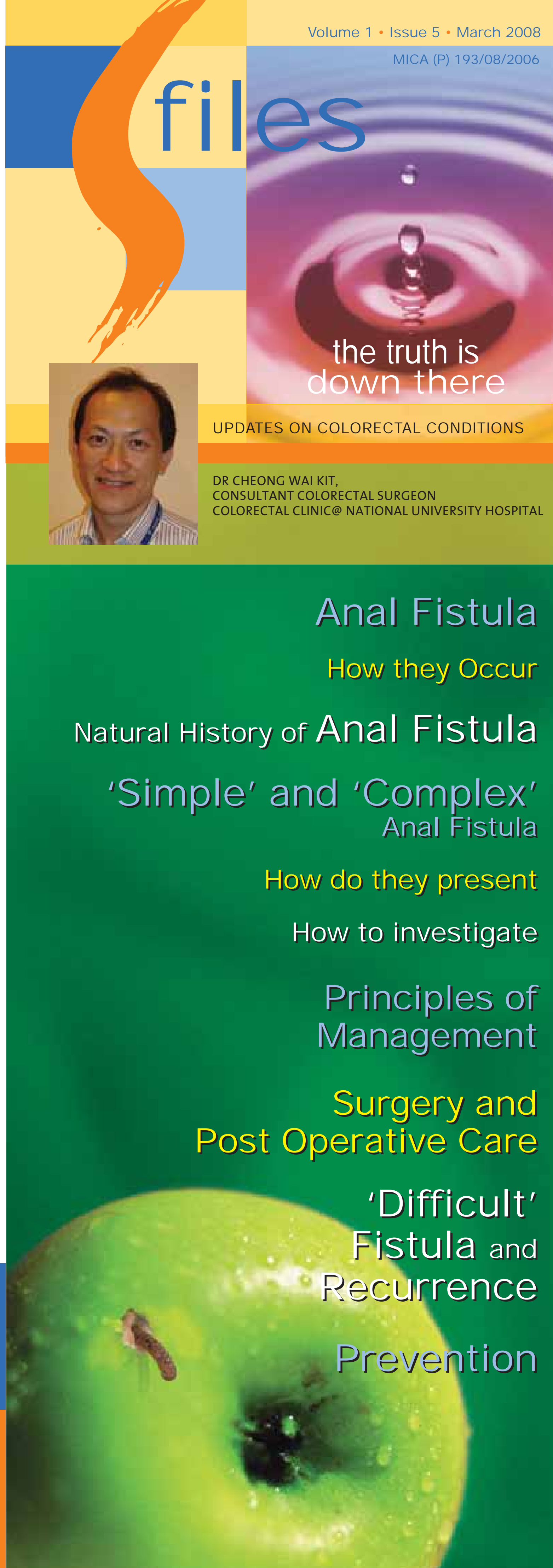


# Anal Fistula

## Introduction

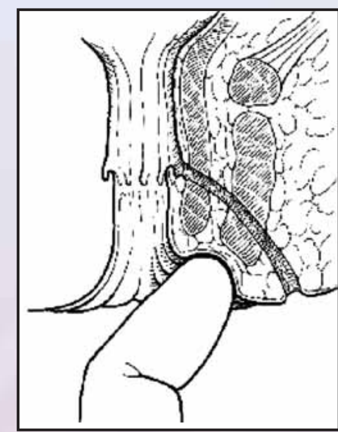
Anal fistula is a recurrent infection affecting the anus and occasionally the lower rectum. It causes considerable discomfort and disability to the sufferer of this chronic condition.

In Singapore, this condition is also known as the 'rat hole' (Lao Shudong) amongst the Chinese community and traditional Chinese medical practitioners. It commonly affects economically active adults in the 3rd to 5th decades of life.

Although, anal fistula has been recognized for thousands of years, the treatment of the complex or recurrent anal fistula continues to challenge surgeons till today.

## What is an Anal Fistula?

A fistula is a medical term describing an abnormal tract with two openings (internal and external) communicating between any two epithelium-lined surfaces.



*Anal Fistula*

Therefore, an anal fistula is an abnormal tract communicating between the perianal area to the anal canal and occasionally to the lower rectum.

## How does it arise?

Infection of the anal gland gives rise to anal abscess and unresolved prolonged infection of these anal glands results in the formation of anal fistula (crytoglandular hypothesis).

90% of all anal abscesses result from non-specific infection of the anal glands. We do not know why certain individuals are prone to this infection but approximately 25% to 30% of these patients with anal abscesses will eventually end up with an anal fistula[1].

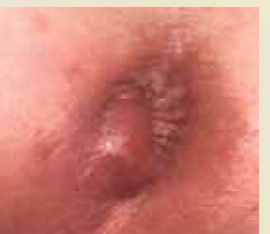
Only people with susceptible anal glands can develop anal abscess and eventually anal fistula.

## Natural History of Anal Fistula

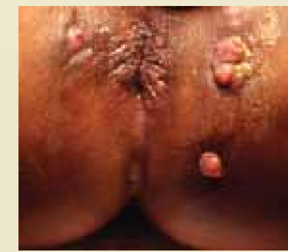
Anal fistula and anal abscess are separate phases along the spectrum of a common infective condition affecting the anus. The abscess represents the acute stage whereas the fistula is the representative of the chronic phase.

The anal canal is a muscular tube approximately 3 to 4 cm long, connecting the rectum to the anal verge. It is made up of 2 cylindrical muscle tubes called the outer and inner anal sphincter muscles. Anal glands are found in-between these two muscle tubes at the level of the dentate line (approximately 2 cm from the anal verge).

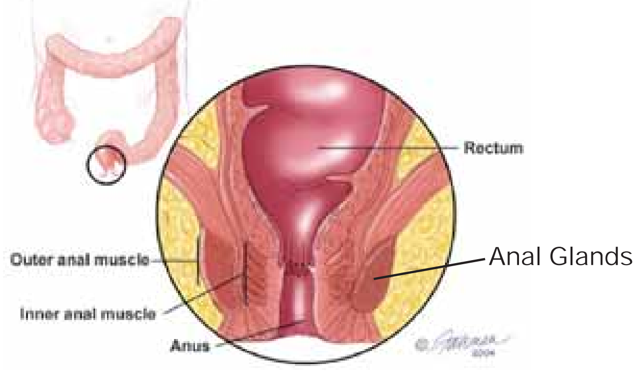




*Anal Abscess*



*Anal Fistula*




The role of these anal glands in human is unknown.

It is believed that the duct from the anal glands is blocked resulting in stasis, infection and subsequently abscess formation. Persistence of the infected anal gland and its duct results in the formation of anal fistula.

## The 'Simple' and the 'Complex' Anal Fistula

As the duct from the infected anal gland leading into the anal canal is blocked, the accumulated pus may spread in other directions. It usually follows the path of least resistance. The path created will determine the type of anal fistula formed.

Anal fistula usually has 2 openings – an internal opening in the anal canal and an external opening outside the anal verge.

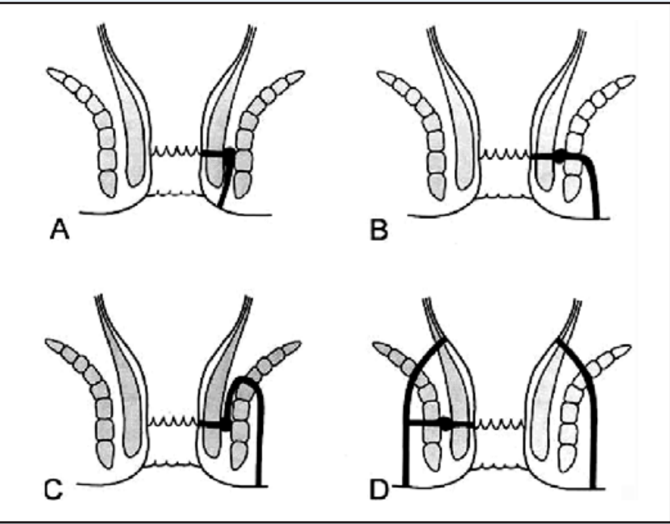
A simple standard classification of the types of anal fistula was described by Parks et al[2] (as shown on the next page). This classification is particularly helpful in determining the type of treatment required by the patient.

There are basically 2 broad groups of anal fistula in clinical practice – simple and complex anal fistula.

The 'complexity' of the anal fistula is basically dependent on:

1. the amount of anal sphincter muscle involvement
2. presence of more than one anal fistula (secondary tract) and/or with abscess cavity
3. anal fistula with tracts above the anal sphincter complex or with the internal opening in the lower rectum or with the external opening further away from the anal verge
4. anal fistula associated with other diseases (eg. Crohn's disease, tuberculosis)






*Parks[1] Classification*

A. Inter-sphincteric Anal Fistula
B. Transphincteric Anal Fistula
C. Supra-sphincteric Anal Fistula
D. Extra-sphincteric Anal Fistula

'Complex' anal fistula is a more severe form of anal fistula. They will definitely require more complicated treatment. Sometimes, the surgical treatment for these fistula is carried out in stages.

Fortunately, majority of the anal fistula is of the 'simple' type and therefore easily treated with good results and low recurrence rate. They are usually:

1. low intersphincteric or transphincteric type
2. single short tract
3. the external opening is close to the anal verge
4. the internal opening is lower (closer to the anal verge)
5. absence of secondary tract or abscess cavity
6. absence of association with other disease

Any other anal fistula that does not fulfill the criteria stated above is considered 'complex'. Persistent anal fistula and recurrent anal fistula despite treatment also render the condition to be complex as they are difficult to treat.

## How do Patients with Anal Fistula Present?

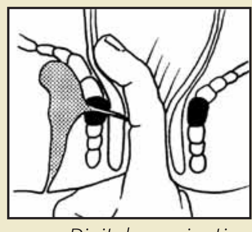
As stated earlier, anal fistula and anal abscess are two different phases in the spectrum of a common infective condition affecting the anus. Therefore, a patient with anal fistula will often recount a history of an anal abscess that has been drained either surgically or spontaneously.

Usually, patient complained of intermittent anal pain and anal swelling followed by discharge and resolution of these symptoms. There is occasional low grade fever during these episodes. Patients may also notice a small lump in the perianal region with occasional bleeding associated with defecation.

Additional bowel symptoms may be present when the anal fistula is associated with other conditions (eg. proctocolitis, Crohn's disease, cancer, tuberculosis, actinomycosis).



## How to Examine?



*Digital examination*

Clinical examination including digital rectal examination is crucial in the assessment of anal fistula.

The external opening may be seen as an elevation of granulation tissue discharging purulent liquid. However the internal opening may not be apparent.

The number of the external openings and their location may be helpful in locating the internal opening and subsequently classifying the type of anal fistula present in the patient. As a rule of thumb, the greater the distance of the external opening from the anal margin, the greater the probability of a complicated extension.

Clinical examination may reveal an indurated cord-like structure underneath the skin in the direction of the internal opening with asymmetry between right and left sides.

It is important to note for perianal surgical scar from previous fistula surgery to detect fistula relapse or recurrence. This will then alert the clinician of a possibility of a complex fistula which may require specialist care.

Bidigital rectal examination must be performed to define the relationship of the tract with the anal sphincter muscles. It also provides information regarding pre-operative anal sphincter tone at rest and on squeezing because of the risk of fecal incontinence.

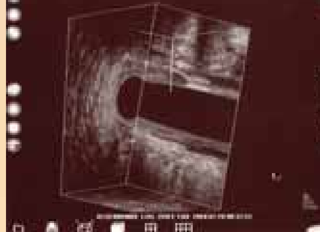
## How to Investigate?

Investigations to be performed in patients with anal fistula is divided into 2 categories –

1. Diagnosis and classification of anal fistula
2. Assessment of integrity and function of anal sphincters

Anoscopy must be performed to identify the internal opening. Sigmoidoscopy should be performed to locate the internal opening and to exclude underlying secondary pathology. Occasionally, total examination of the large bowel is required either using colonoscopy or barium enema in patients with atypical, complex, multiple or recurrent anal fistula who have symptoms suggestive of inflammatory bowel disease.

Endoanal ultrasonography is useful in the total assessment of anal fistula. It allows imaging of the fistula tract to provide information on the complexity of the anal fistula, detect the presence of secondary abscess cavity and establish relationship of the fistula to the anal sphincter complex. Other modalities



*Endoanal Ultrasound*