



SETON INSERTION AS MANAGEMENT FOR ANAL FISTULA.

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INTRODUCTION AND DEFINITIONS

- ▶ A fistula-in-ano is an abnormal hollow tract or cavity that is lined with granulation tissue and that connects a primary opening inside the anal canal to a secondary opening in the perianal skin; secondary tracts may be multiple and can extend from the same primary opening. It **should be differentiated** from the following processes, which do not communicate with the anal canal:
 - Hidradenitis suppurativa
 - Infected inclusion cysts
 - Pilonidal disease
 - Bartholin gland abscess in females

INTRODUCTION AND DEFINITIONS

- ▶ Most fistulas are thought to result from cryptoglandular infection with resultant perirectal abscess. The abscess represents the acute inflammatory event, whereas the fistula is representative of the chronic process.
- ▶ Symptoms generally affect quality of life significantly, and they range from minor discomfort and drainage with resultant hygienic problems to sepsis.

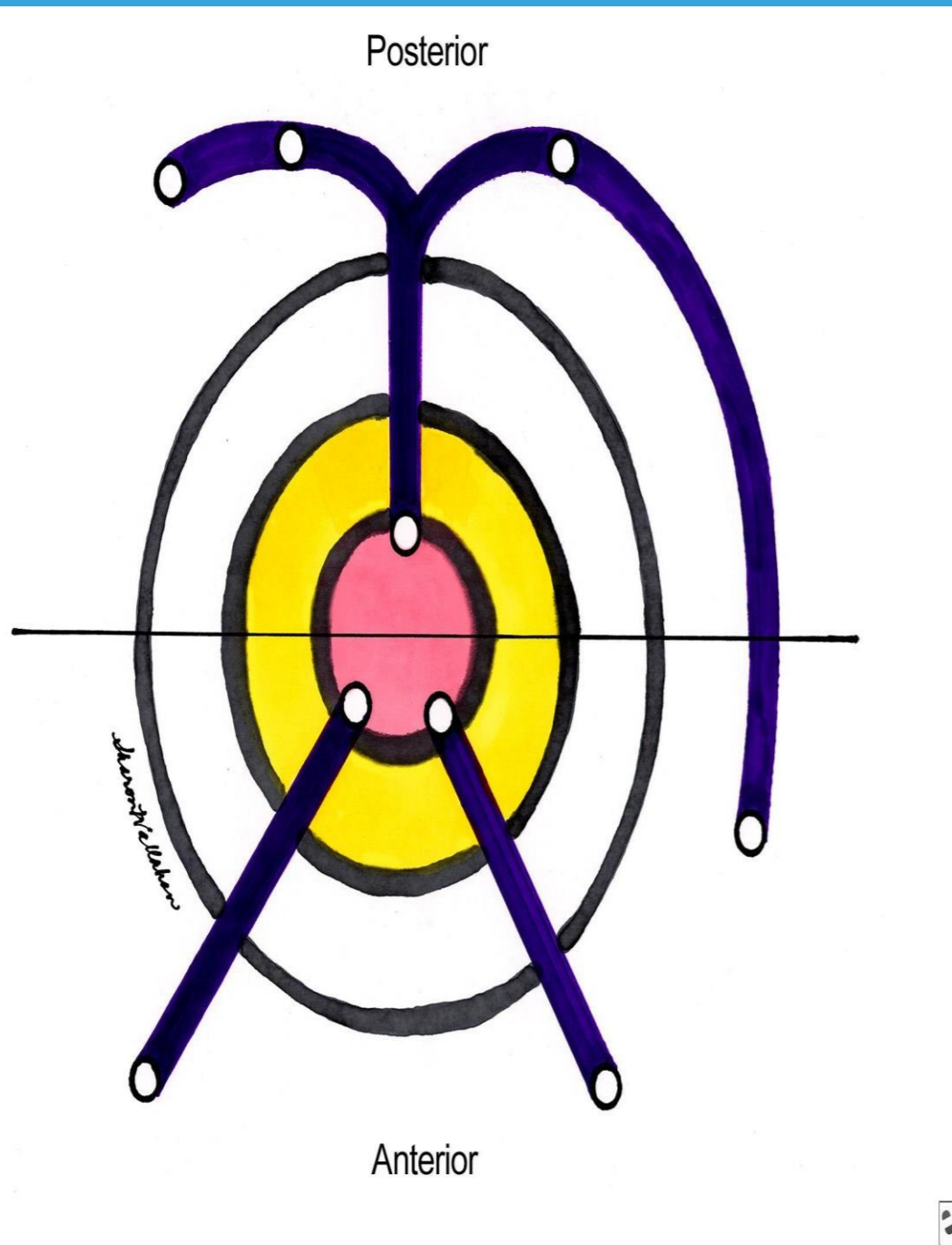
ETIOLOGY

- ▶ In the vast majority of cases, fistula-in-ano is caused by a previous anorectal abscess. The cryptoglandular hypothesis states that an infection begins in the anal canal glands and progresses into the muscular wall of the anal sphincters to cause an anorectal abscess.
- ▶ After surgical or spontaneous drainage in the perianal skin, a granulation tissue–lined tract is occasionally left behind, causing recurrent symptoms

ETIOLOGY

- ▶ Multiple series have shown that formation of a fistula tract after anorectal abscess occurs in 7-40% of cases.
- ▶ Other fistulas develop secondary to trauma (eg, rectal foreign bodies), Crohn disease, anal fissures, carcinoma, radiation therapy, actinomycoses, tuberculosis, and lymphogranuloma venereum secondary to chlamydial infection.

CLASSIFICATION

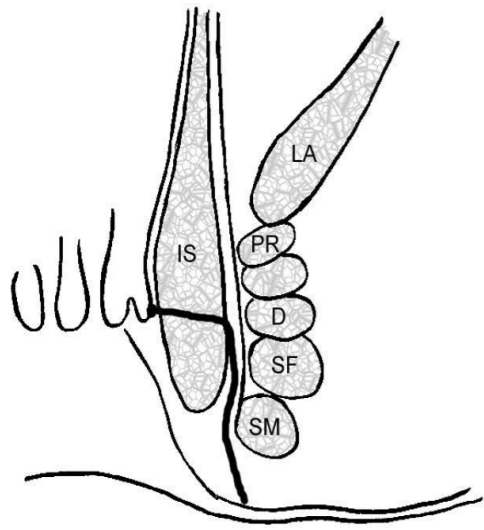


In simple cases, the Goodsall rule can help anticipate the anatomy of a fistula-in-ano. This rule states that fistulas with an external opening anterior to a plane passing transversely through the center of the anus will follow a straight radial course to the dentate line. Fistulas with their openings posterior to this line will follow a curved course to the posterior midline (see the image below). Exceptions to this rule are external openings lying more than 3 cm from the anal verge. These almost always originate as a primary or secondary tract from the posterior midline, consistent with a previous horseshoe abscess.

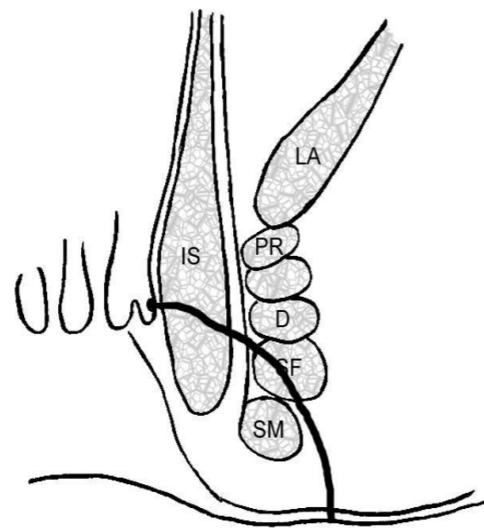
PARK'S CLASSIFICATION

The classification system developed by Parks, Gordon, and Hardcastle (generally known as the Parks classification) is the one most commonly used for fistula-in-ano. This system defines four types of fistula-in-ano that result from cryptoglandular infections, as follows:

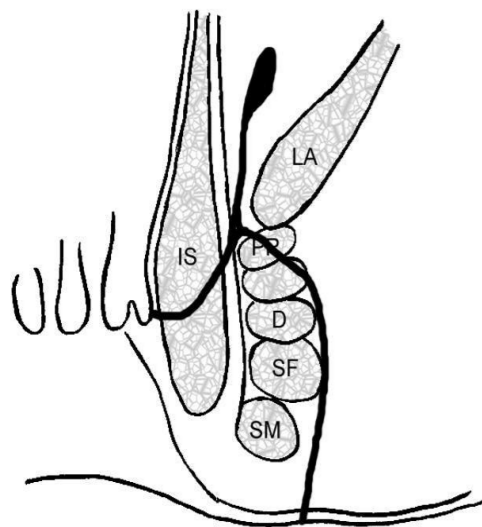
- Intersphincteric.
- Transsphincteric.
- Suprasphincteric.
- Extrasphincteric.



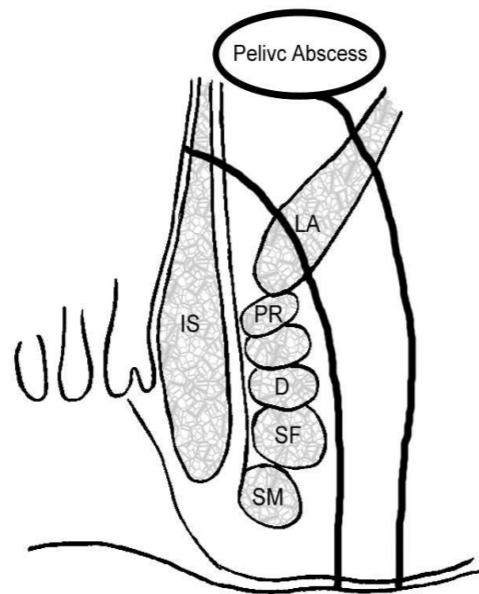
Intersphincteric Fistula



Transsphincteric Fistula



Suprasphincteric Fistula



Extrasphincteric Fistula

IS - Internal sphincter
SM - Submucosal ext. sphincter
SF - Superficial ext. sphincter
D - Deep external sphincter
PR - Puborectalis muscle
LA - Levator ani muscle

PRESENTATION (HISTORY)

Patients often provide a reliable history of previous pain, swelling, and spontaneous or planned surgical drainage of an anorectal abscess. Signs and symptoms of fistula-in-ano, in order of prevalence, include the following:

- Perianal discharge
- Pain
- Swelling
- Bleeding
- Diarrhea
- Skin excoriation
- External opening

PRESENTATION (HISTORY)

Important points in the patient's history that may suggest a complex fistula include the following:

- Inflammatory bowel disease
- Diverticulitis
- Previous radiation therapy for prostate or rectal cancer
- Tuberculosis
- Steroid therapy
- HIV infection

PRESENTATION (EXAMINATION)

Physical findings are the mainstay of diagnosis.

- ▶ The examiner should observe the entire perineum, looking for an external opening that appears as an open sinus or elevation of granulation tissue. Spontaneous discharge of pus or blood via the external opening may be apparent or expressible on digital rectal examination.
- ▶ Digital rectal examination (DRE) may reveal a fibrous tract or cord beneath the skin. It also helps to delineate any further acute inflammation that is not yet drained. Lateral or posterior induration suggests deep postanal or ischiorectal extension

INVESTIGATIONS

- ▶ Radiologic studies should not be performed for small intersphincteric or low anal fistula evaluation, because in most cases, the anatomy of a fistula-in-ano can be determined in the operating room. However, such studies can be helpful when the primary opening is difficult to identify or when recurrent or persistent disease is present. In the case of recurrent or multiple fistulas, such studies can be used to identify secondary tracts or missed primary openings.
- ▶ MRI and Endo-anal ultrasound are the 2 main imaging studies that are used nowadays.

MANAGEMENT

- ▶ Treatment of fistula-in-ano remains challenging. No definitive medical therapy is available for this condition, though long-term antibiotic prophylaxis and infliximab may have a role in recurrent fistulas in patients with Crohn disease.
- ▶ Surgery is the treatment of choice, with the goals of :
 - 1- Draining infection.
 - 2- Eradicating the fistulous tract.
 - 3- Avoiding persistent or recurrent disease while preserving anal sphincter function.

MANAGEMENT

Examination under anesthesia

- ▶ Examination of the perineum, digital rectal examination (DRE), and anoscopy are performed after the anesthesia of choice is administered.
- ▶ This must be done before surgical intervention is initiated, especially if outpatient evaluation causes discomfort or has not helped to delineate the course of the fistulous process.

MANAGEMENT

- ▶ Several techniques have been described to help locate the course of the fistula and, more important, identify the internal opening.

They include the following:

- Inject hydrogen peroxide, or dilute methylene blue into the external opening and watch for egress at the dentate line; some authors says that methylene blue often obscures the field more than it helps identify the opening

MANAGEMENT (SETON)

- ▶ A seton can be placed alone, combined with fistulotomy, or in a staged fashion. This technique is useful in patients with the following conditions:
 1. Complex fistulas (ie, high transsphincteric, suprasphincteric, extrasphincteric) or multiple fistulas.
 2. Recurrent fistulas after previous fistulotomy.
 3. Anterior fistulas in female patients.
 4. Poor preoperative sphincter pressures.
 5. Patients with Crohn disease or patients who are immunosuppressed.

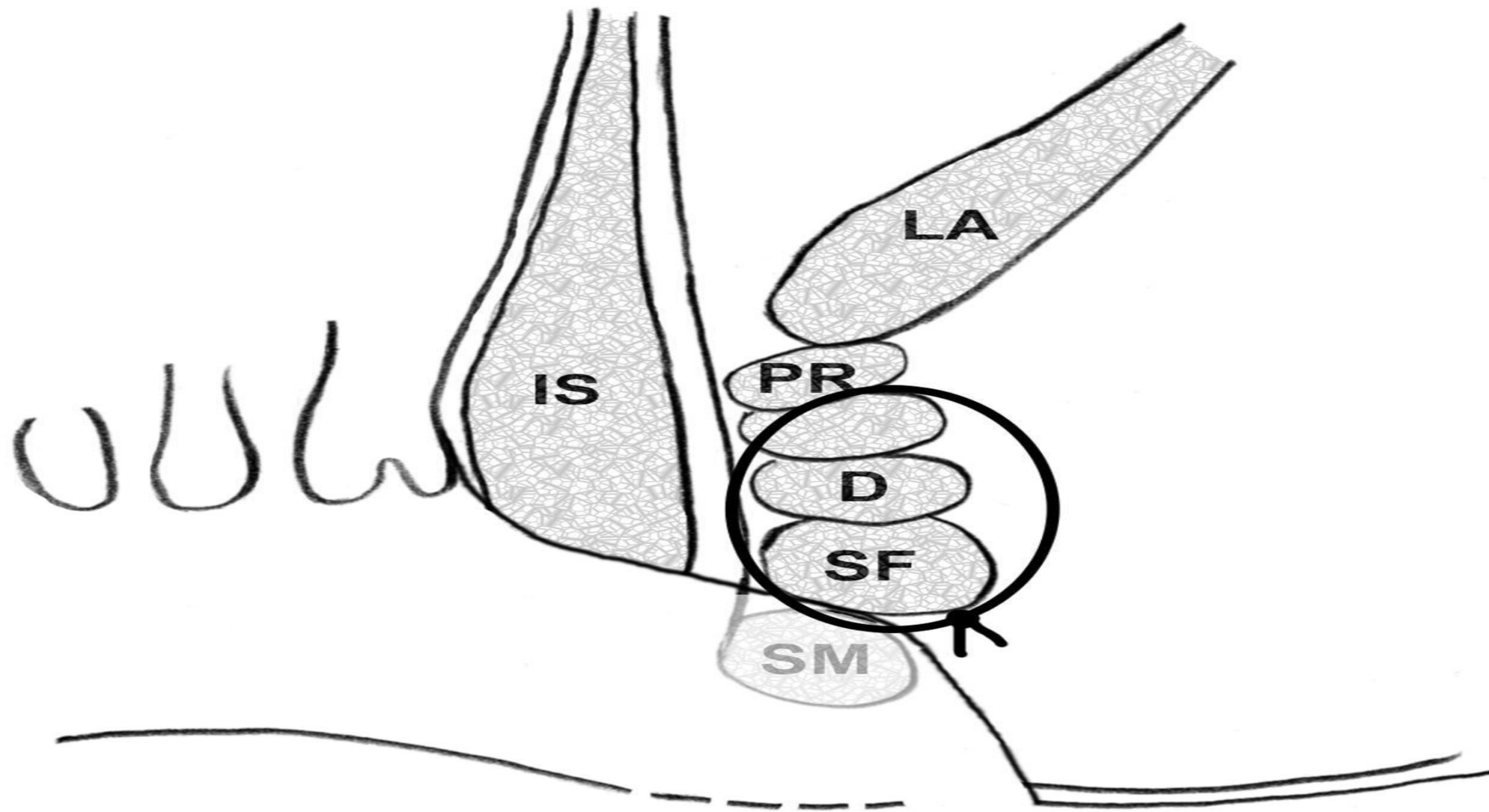
MANAGEMENT (SETON)

- ▶ Beyond giving a visual identification of the amount of sphincter muscle involved, the purposes of setons are **to drain, to promote fibrosis, and to cut through the fistula.**
- ▶ Setons can be made from large silk suture, silastic vessel markers, or rubber bands that are threaded through the fistula tract.

Memon AA, Murtaza G, Azami R, Zafar H, Chawla T, Laghari AA. Treatment of complex fistula in ano with cable-tie seton: a prospective case series. *ISRN Surg.* 2011. 2011:636952

SINGLE-STAGE SETON (CUTTING)

- ▶ The Seton is passed through the fistula tract around the deep external sphincter after opening the skin, subcutaneous tissue, internal sphincter muscle, and subcutaneous external sphincter muscle. The seton is tightened down and secured with a separate silk tie.



High Transsphincteric Fistulotomy with Seton (divided muscle is dotted)

- IS** - Internal sphincter
- SM** - Submucosal ext. sphincter
- SF** - Superficial ext. sphincter
- D** - Deep external sphincter
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SINGLE-STAGE SETON (CUTTING)

- ▶ With time, fibrosis occurs above the seton as it gradually cuts through the sphincter muscles and essentially exteriorizes the tract.
- ▶ The seton is tightened on subsequent office visits until it is pulled through over 6-8 weeks. A cutting seton can also be used without associated fistulotomy.

SINGLE-STAGE SETON (CUTTING)

- ▶ Recurrence and incontinence are important factors to consider when this technique is employed. The success rates for cutting setons range from 82-100%; however, long-term incontinence rates can exceed 30%.

Cox SW, Senagore AJ, Luchtefeld MA, Mazier WP. Outcome after incision and drainage with fistulotomy for ischiorectal abscess. *Am Surg.* 1997 Aug. 63 (8):686-9.

Hammond TM, Knowles CH, Porrett T, Lunniss PJ. The Snug Seton: short and medium term results of slow fistulotomy for idiopathic anal fistulae. *Colorectal Dis.* 2006

TWO-STAGE SETON (DRAINING/FIBROSING)

- ▶ Pass the seton around the deep portion of the external sphincter after opening the skin, subcutaneous tissue, internal sphincter muscle, and subcutaneous external sphincter muscle.
- ▶ Unlike the cutting seton, the seton is left loose to drain the intersphincteric space and to promote fibrosis in the deep sphincter muscle. Once the superficial wound is healed completely (2-3 months later), the seton-bound sphincter muscle is divided.

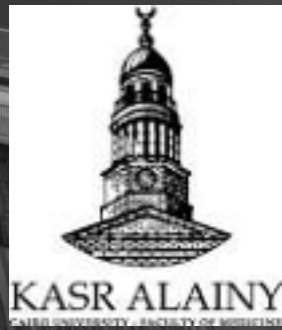
TWO-STAGE SETON

- ▶ The loose seton technique facilitates drainage and promotes the development of a mature fistula track, without placing the sphincter at risk.
- ▶ However, this technique may result in persistence of the fistula through continuously stimulating fibrosis, leading to low rates of complete healing.

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- ▶ Although the cutting (tight) seton, which gradually transects the external sphincter muscle, can completely cure fistula, it has consistently produced unacceptable rates of incontinence and severe pain.

CONCLUSION AND TAKE HOME MESSAGES

- ▶ **Seton placement either cutting or loose may represent a good safe option especially in management of recurrent high complex fistulas.**
- ▶ **Always consider seton placement if you feel unsafe to use the known sphincter saving techniques especially if you are not experienced in them.**
- ▶ **However, on the other hand , It is not shameful to depend on seton management even if the operator is a well-trained colorectal surgeon who is experienced in performing sphincter saving techniques.**



QUESTIONS??

THANK YOU