LOS ANGELES

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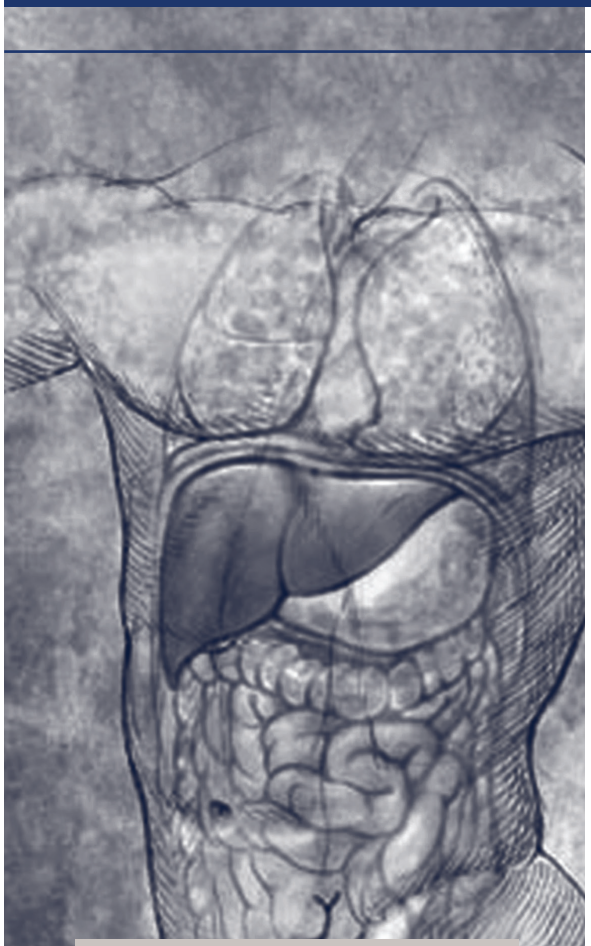


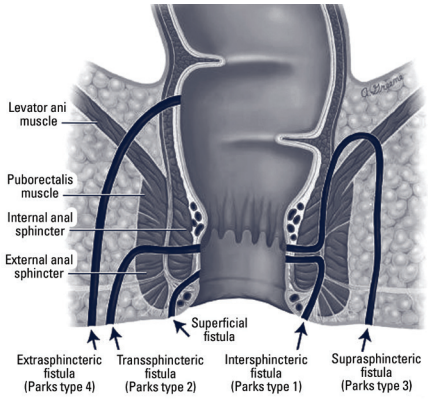
THE PERIRECTAL FISTULA

AN OLD PROBLEM. NEW OPTIONS.

"...there is more than one way to approach an anal fistula. The complexity of an anal fistula requires an individual solution, with multiple factors to consider..."

THE ABSCESS... A FISTULA IN THE MAKING.

Anorectal abscesses are fairly common and are a source of considerable morbidity. Beginning as perianal or perirectal cellulitis originating from an anal gland infection, the inflammatory process grows and spreads to the soft tissues around the anorectum. Responsible bacteria include E. Coli, Bacteroides fragilis, staphylococci, streptococci or rarely, Mycobacterium tuberculosis. Inciting causes include anal crypt infections, an infected anal fissure, a necrotic thrombotic hemorrhoid, injury due to an enema tip, recent anorectal surgery, anal canal abrasions, blood-borne infections, ulcerative colitis, Crohn's Disease or rarely, Tuberculosis.



As the purulent material burrows outward from the anorectal canal, the resulting closed-space inflammation may become purulent and fluctuant. It may be seen as an area of erythema in the perianal skin. Often, the abscess presents as a painful fluctuant mass. This situation is worsened in immunocompromised patients and in those patients with diabetes mellitus. Rarely, the abscess may become life threatening and may spread throughout the perineum, resulting in systemic sepsis.

A fully developed abscess may spontaneously rupture externally or may require surgical incision and drainage. Either way, the patient experiences relief of pain following the rupture or drainage. Often, the abscess cavity heals and closes without further sequelae. However, in fifty percent of patients a residual connection remains, resulting in a perianal or perirectal fistula.

FIRST AN ABCESSS. THEN, THE FISTULA.

Fistula is the Latin word for reed or pipe. In the clinical setting a fistula is a chronic granulating tract connecting two epithelial-lined surfaces; in this case the fistulous connection occurs between the anorectum and the skin of the buttocks. Most commonly caused by a previous anorectal bacterial abscess, other less frequent causes include inflammatory bowel disease (Crohn's Disease or ulcerative colitis), Actinomycosis or Lymphogranuloma venereum. For unknown

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reasons, this disease process occurs twice as frequently in men compared with the rate in women.

Most often, a patient will give a history of having experienced an abscess which ruptured spontaneously or was drained surgically. Subsequent to this, there may be a continuous or intermittent drainage of purulent material. The condition is usually painless but may be associated with pain when the purulent material ceases to drain and then builds up. Perianal pruritus or soreness are common coexisting symptoms.

Diagnosis may be made through visual inspection by an experienced observer, palpation, passage of a probe into the external opening, by proctosigmoidoscopy, or through the passage of a radio-opaque liquid into the fistula while observing the flow with fluoroscopy.

THE FISTULA CAN RESOLVE SPONTANEOUSLY... OR NOT.

Rarely, the fistula may close spontaneously. Most often, a chronic fistula will require some form of surgical treatment to effect healing. Most commonly, a fistulotomy is necessary in order to cure the fistula. Usually, the fistulous tract is opened surgically and allowed to granulate and resolve. Recurrences are not uncommon, and the treatment is usually curative.

THE FISTULA DID NOT RESOLVE. NOW WHAT?

Surgical treatment often involves a simple fistulotomy, a procedure in which the fistula is opened and allowed to heal by secondary intention. While reliable, the fistulotomy has been associated with postoperative pain, slow healing and cannot be used when large amounts of the sphincter complex are involved with the fistulous process. Incising a large amount of anal sphincter may lead to incontinence. To avoid sphincter damage, other methods of treatment have been tried. These include fibrin glue sealant (which has had a limited success rate), cutting seton drainage (whereby a suture is placed into the tract and allowed to slowly cut through the tissues. This replaces the now divided anal sphincter with scar tissue in an effort to avoid the incontinence associated with a rapid division of the anal sphincter complex.), and advancement flaps used to cover the internal opening. This allows for granulation and healing of the fistula. The results of each of these has been less than perfect.

In more extensive or complicated fistulae, and in those fistulae which course through a large amount of anal sphincter, special surgical techniques are required in order to avoid damage to the anal sphincter mechanism and possible postoperative incontinence. Surgical treatment of a fistula associated with active Crohn's colitis may result in a chronically draining, non-healing surgical wound and requires specialized consideration and treatment.

A COMPLICATED FISTULA. SEND IN THE SPECIALIST.

A Flap? An older, commonly used technique to repair a fistula is the advancement flap. In this technique, a flap of normal rectal mucosa is used to simply cover the internal opening. While elegant in theory, these flaps can fail, leaving the patient no better off than before the operation.

Glue? Fibrin sealant involves injecting the fistula tract with a mixture of fibrinogen, thrombin, and calcium ions through a catheter which is advanced into the fistula tract up to the internal opening. Up to 5 cc's of the glue is injected, potentially sealing off the tract. Fibrin glue is used to treat complex fistulas as a way to avoid extensive surgery. However, long-term healing of the fistula tract has been disappointing with success rates ranging from 14 - 69%. Extravasation of the sealant and failure of the tissues to incorporate the glue are the most likely cause of failure.

A Plug? Two types of fistula plugs have been developed: a collagen plug made of lyophilized decellularized porcine small intestinal submucosa was developed first, followed by the development of another completely synthetic fistula plug introduced in 2009. Results of the collagen plug were disappointing due to plug extrusion, with failure rates up to 71% in some studies. Attempts were made to prevent extrusion including suturing the plug to the fistula's internal opening but not only did this not always prevent extrusion, but patients also found it uncomfortable. The completely synthetic fistula plug, which is a matrix of polymers polyglycolic acid/trimethylene carbonate (PGA/TMC), acts as a scaffolding for tissue ingrowth to promote healing. The plug consists of a disc sutured to the internal opening with 6 legs attached which are pulled through the fistula tract.

A Scope? Another procedure, which is also meant to preserve the sphincteric complex is the VAAFT (Video-Assisted Anal Fistula Treatment) which involves placing a fistula scope into the fistula tract to directly view the tract and locate the internal opening. A unipolar electrode is used to cauterize and seal the fistula tract whilst cleaning the tract of any debris using an endobrush. The internal opening is then closed with sutures. Success rates have been reported to range from 66.7% to 87.5%.

Need A Lift? The LIFT (Ligation of Intersphincteric Fistula Tract) has a reported success rate of 94%. The procedure involves an incision in the intersphincteric groove, identification and ligation of the intersphincteric fistulous tract, removal of granulation tissue, and suturing closed the external perianal fistula opening. A LIFT spares the anal sphincters by dividing the fistula tract between the internal and external anal sphincters. No muscle is divided during a LIFT.

EXPERIENCE, JUDGMENT, AND NATURE.

As can be seen by the above multiple techniques, there is more than one way to approach an anal fistula. The complexity of an anal fistula requires an individual solution, with multiple factors to consider, including previous surgical attempts, underlying diseases, and the nature and course of the fistula tract.

The successful treatment of the anal fistula requires specialized knowledge and experience. Even with the best of plans and surgical technique, treatment may be prolonged, difficult and unsuccessful. However, ultimately, most fistulas can be treated and cured.