

# The Perirectal Fistula

## An old problem. A new treatment?

With the development of a new material and a relatively painless technique to close a perianal or perirectal fistula, it is useful to review the pathophysiology and treatment options for anal abscesses and anorectal fistulae. The new material, Surgisis<sup>®</sup>, is composed of porcine small intestinal submucosa rolled into a conical shape and inserted into an existing fistula (figure 1). This allows for tissue ingrowth and fistula closure.

### 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



Fig. 1 The Surgisis<sup>®</sup> plug.

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 rupture externally or may require surgical incision and 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.

### 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

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*"...investigation has focused on finding a less painful and safer method of treatment... of anorectal fistulae."*

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frequent causes include inflammatory bowel disease (Crohn's Disease or ulcerative colitis), Actinomyces or Lymphogranuloma venereum. For unknown reasons, this disease process occurs twice as frequently in men than 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, builds up and then ruptures. 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.

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, but the treatment is usually curative.

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. Also used have been 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 (figure 2), 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 NEW TREATMENT

Given the potential for serious complications and pain associated with the surgical treatment of anorectal fistulae, investigation has focused on finding a less painful and safer method of treatment. It is against this backdrop that the use of the Surgisis® AFP™ plug has emerged as a possible new technique in our surgical armamentarium.

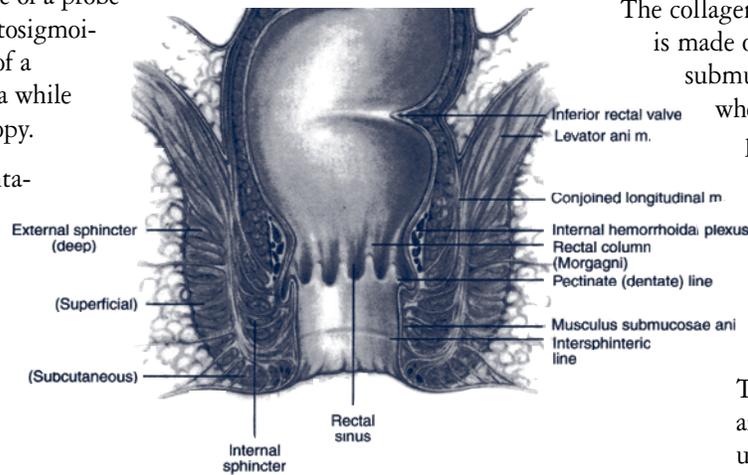


Fig. 2 Anatomy and musculature of the anal region.

The collagen plug is cone shaped and is made of porcine small intestinal submucosa. It is acellular, and when placed into the fistula tract, provides a scaffolding through which the host granulation tissue may grow, thus closing the fistula. It appears to be resistant to infection and does not elicit a foreign body reaction.

The procedure is performed in an outpatient operating room under intravenous sedation and local anesthesia. The plug is placed into the internal anorectal opening and pulled through

the tract to the external opening. It is sutured in place internally, thus obliterating the primary internal opening. Patients are instructed to avoid strenuous physical activity or intense valsalva maneuvers for two weeks postoperatively.

Healing has been reported in up to eighty seven percent of patients<sup>1</sup>. Postoperative complications have been minimal and postoperative pain is markedly less than in traditional procedures.

Surgisis® AFP™ has been used with success in complex fistulae and in patients with Crohn's disease. More in depth studies are now formally evaluating the use of Surgisis® AFP™ in patients with Crohn's disease.

While long term follow up is underway, it appears that the use of Surgisis® AFP™ may become a safer and less painful option in our surgical armamentarium for the treatment of anorectal fistulae.

1. Armstrong, David N. M.D., et al Efficacy of anal fistula plug vs. fibrin glue in closure of anal rectal fistula. Diseases of the Colon and Rectum 2006; 49: 371-376