Fistula-In-Ano

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FISTULA PHYSIOLOGY:

A fistula is a communication between the anus and the outside skin. A primary hole exists just inside the anus which is the beginning of a tract that leads to a hole outside of the anus. It is similar to a tunnel underneath a road. It is open on one side, travels under the road and comes out on the other side. Think about a tunnel near a beach where one opening is on the beach side and the other opening is on the land side. If the tide were to get very high, the water would travel into the tunnel and wash out on the land side. This is what happens with a fistula. The stool gets into the inside hole and travels along the tunnel which drains via the outside (land side) hole.

FISTULA DEVELOPMENT:

One type of fistula is called a cryptoglandular fistula. The inside of the anus is lined with 4-6 crypts (holes) which are connected to glands. The glands secrete mucous to lubricate the anus to help the bowel movements slide out. When the crypt becomes blocked with stool, the gland becomes infected leading to an abscess (infection). The abscess can drain spontaneously. If it does not drain on its own, it will need to be surgically drained, usually at the skin level outside the anus. Once the abscess is drained there is a 50/50 chance of forming a fistula or a tract between the inside crypt and the outside opening where the abscess drained. Crohn's disease (an inflammatory disease of the bowel and anus) is another cause of an abscess and fistula and is not described in detail in this pamphlet.

FISTULA HEALING:

It is rare for a fistula to heal spontaneously. In order to heal, the internal opening (crypt) must be obliterated and therefore surgery is necessary. Of the options to remove the internal opening, a fistulotomy is one of the best. Other methods include fibrin glue, a Surgisis® anal fistula plug or an endorectal advancement flap. The later procedures are reserved for complicated or recurrent fistulas.

FISTULA SURGERY

- **FISTULOTOMY:**

This surgery works very well for uncomplicated and complicated fistulas. The success rate in uncomplicated fistulas is up to 98%. Let's go back to the tunnel explanation. If the shop owners on the land side were to complain to the city about the water leak from the tunnel, there are 2 ways of fixing the problem. One is the "cheap way" and the other is the correct way. The "cheap way" to fix the problem would be to build a brick wall on the land side of the opening. The salt water would still wash into the tunnel, but the wall would keep the land side dry. Over time the salt water erodes the wall and the leaking recurs. This "cheap way" is how your body tries to fix the problem. Your body creates scar tissue over the outer hole to prevent drainage. When too much fluid fills the tunnel (fistula tract) it erodes or bursts through the scar tissue and leaks.

The correct way to fix the tunnel we spoke of earlier would be to remove the road down to the tunnel. This entails removing the cement or asphalt. Once removed the workers fill the tunnel with cement and then repave the road. A fistulotomy is similar to this process. In the operating room I find the tunnel with a probe and then remove the skin, and tissue below the skin which includes fat and muscle (all of the tissue constitutes the road). I then clean out the tunnel with an instrument. Unlike the tunnel analogy, I don't fill the open tunnel with cement as there is no such substance like this for the body. Your body will fill the open wound with scar tissue which acts like cement. The scar tissue grows from the deep tissue upward to fill the open tunnel. This process takes 4-6 weeks.

The majority of fistulas are simple and require opening the tract (fistulotomy I just discussed). One small risk of a fistulotomy includes leaking of gas or stool after the surgery. Since the fistula usually travels through the sphincter muscles, if too much muscle is cut, the risk of incontinence increases. This risk is about 3-5%. Prior to opening the fistula tract, the amount of muscle within the tract is observed and if a majority of the sphincter muscle is traversed by the fistula, a seton (rubber band) will be placed around the muscle instead of surgically dividing the muscle. The seton cuts through the sphincter muscle over a period of weeks allowing the muscle to be divided without losing its integrity. The seton is tightened in the office every 2-3 weeks until it falls out. Placing a seton decreases the risk of incontinence and heals the fistula.

- **FIBRIN GLUE**
  This surgery, like the Surgisis® anal fistula plug (below), is primarily used for complex or recurrent fistulas. Complex fistulas include; fistulas that in most instances did not heal after the traditional surgery, fistulas that burrow very deep under the muscles, or fistulas caused by the inflammatory bowel disease called Crohn's disease. Fibrin glue was developed in the 90's to close fistulas. Like its name it is a viscous or thick liquid used to fill the fistula tract. The glue is made of 2 types of

human serum, fibrinogen and thrombin. After injecting the glue into the fistula and suturing the internal opening, the glue hardens and over time dissolves. This was the first real attempt at plugging the tract. The advantage of this technique is that there is no risk of incontinence and it could be repeated if it failed. The disadvantage is that the glue typically fell out of the tract and the results were very poor. This technique fell out of favor once the Surgisis® anal fistula plug came into the marketplace.

- **Surgisis® Anal Fistula Plug**
  This surgery is primarily used for complex or recurrent fistulas. Complex fistulas include; fistulas that in most instances did not heal after the traditional surgery, fistulas that burrow very deep under the muscles, or fistulas caused by the inflammatory bowel disease called Crohn's disease. This surgery does not work for straight forward, regular fistulas. The Surgisis® fistula plug is exactly what it sounds like. It is a plug used to fill the fistula cavity. The plug is made out of an absorbable material. In surgery the fistula is identified and the plug is placed within the fistula and sewn into place. Over time the fistula tract heals and the plug dissolves helping to form scar tissue. The results in the literature based on one physician's figures show it to be > 80% effective.1 When comparing the fistula plug to the fibrin glue the fistula plug was found to be superior. 2 It is unknown if these numbers are completely accurate as there are no other studies reproducing these figures. This surgery is an excellent option for the complex fistulas as there is no risk of incontinence and if it fails it can safely be performed again. For complex fistulas I recommend the Surgisis® anal fistula plug surgery.

- **Rectal Mucosal Advancement Flap**
  This surgery is also used for complex or recurrent fistulas. Complex fistulas include; fistulas that in most instances did not heal after the traditional surgery, fistulas that burrow very deep under the muscles, or fistulas caused by the inflammatory bowel disease called Crohn's disease. The rectal mucosal advancement flap operation is a major operation which involves taking the lining of the rectum just above the inner opening of the fistula and using it to cover the internal opening. The lining of the rectum is cut in a way that makes a flap of tissue with its blood supply intact. The flap is pulled down over the inner opening and sutured (stitched) into place. The success rate is about 60%. The reason the success rate is lower than the traditional surgery is due to a couple of factors. One reason is because these fistulas are complicated and have already failed surgery making them harder to cure. Secondly, this procedure involves a lot of suturing of tissue with the inherent risk of a failure of the wound to heal allowing stool to enter into the internal opening. Finally, for patients with Crohn's disease who need the surgery, the Crohn's disease itself decreases the body's ability to heal the area of surgery which lowers the chance of it working. This is the surgery of choice for patients who have

Crohn's related fistulas or for patients without Crohn's disease who have failed the other forms of surgery and still have a fistula. If you require this surgery the risks and benefits can be explained at your office visit.

THE BENEFITS OF SURGERY:

- **Fistulotomy**
  - Fistulas rarely heal without surgery. It is very uncommon for a fistula tract to heal on its own even with the use of antibiotics
  - Without surgery recurrent infections and persistent drainage is common. The infections can become severe (Fournier's gangrene) requiring emergency surgery.
  - There is a small risk of developing a cancer in a chronic untreated fistula tract.
  - It works very well. The recurrence rate for fistulotomy (chance of the fistula coming back after surgery) is only about 2% (very low).

- **Surgisis® Anal Fistula Plug**
  - Fistulas rarely heal without surgery. It is very uncommon for a fistula tract to heal on its own even with the use of antibiotics
  - Without surgery recurrent infections and persistent drainage is common. The infections can become severe (Fournier's gangrene) requiring emergency surgery.
  - There is a small risk of developing a cancer in a chronic untreated fistula tract.
  - There is no risk of incontinence and the surgery can be safely performed again if it fails.
  - Less pain than from fistulotomy
  - Success rate is greater than 80% based on one surgeon's experience. 1

THE RISKS OF SURGERY:

- **Fistulotomy**
  - Severe Bleeding 1-2%
  - Infection 1-2%
  - Anesthesia complications (rare)
    - Stroke
    - Clots in the legs
    - Heart attack
    - Pulmonary embolism
    - Death
  - Incontinence risk of 3-5%
  - Possible need for a seton requiring in office tightening.

- **Surgisis® Plug**
  - Severe Bleeding 1-2%

- Infection 1-2%
- Recurrence up to 20%
- Does not work with uncomplicated fistulas.
- Anesthesia complications (rare)
  - Stroke
  - Clots in the legs
  - Heart attack
  - Pulmonary embolism
  - Death

The type of surgery you will need is based on the type of fistula you have along with other factors such as Crohn's disease and your risk of incontinence after surgery. For most fistulas I perform the fistulotomy surgery with or without a seton. If one of the other surgeries was recommended we already discussed the reasons for this in the office at your visit and you understand and agree.

I _____ received this information sheet on fistula and treatment. I understand and agree.

_____ _____

Signature Date

REFERENCES:

1. Champagne B, O'Connor L, Ferguson M, Orangio G, Schertzer M, Armstrong D. Efficacy of anal fistula plug in closure of cryptoglandular fistulas: Long – term follow-up. Dis Colon Rectum 2006;49:1817-1821.

2. Johnson e, Gaw J, Armstrong D. Efficacy of Anal fistula plug vs. fibrin glue in closure of anorectal fistulas. Dis Colon Rectum 2006;49 371-376.