



## Video Assisted Anal Fistula Treatment “VAAFT Technique” for Anal Fistulas

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### Abstract:

Fistula in *ano* -: It is a complete tract with two openings in *Anorectal* region, one in the external surface, second in the anal canal or in higher anatomical structures<sup>1</sup>. Fistula in *Ano* commonly develops as a symptomatic or asymptomatic abscess due to *cryptoglandular* infection; treatment depends upon the location of the anatomy or tract of the fistula. General principle for management of Fistula in *Ano*-Irrigation of the whole fistulous tract, part of the fistulous track which is opened outside should be excised, obliteration of the internal opening is the key of success, excised tract should be send for *Histopathological* investigation to rule out other pathology e. g. Tuberculosis.

**Introduction:** Video assisted Anal Fistula treatment (VAAFT) is a minimally invasive technique for complex Anal Fistulas to save the Sphincter damage even after repeated Procedures for recurrences are performed. This technique, initially described by P. *Meinero*, has been adopted by us as a new promising modality in treating Fistula in *Ano*. The aim of our study is to share our experience in our setup with minor changes in the initial method described by *Meinero* P. **Background:** Anorectal fistula represents an epithelized communication path of infectious origin between the rectum or anal canal and the perianal region. The association of endoscopic surgery with the minimally invasive approach led to the development of the video-assisted anal fistula treatment<sup>3</sup>. **Aim:** To describe the technique and initial experience with the technique video-assisted for anal fistula treatment. **Technique:** A *Karl Storz* video equipment is used. Main steps included the visualization of the fistula tract using the *fistuloscope*, the correct localization of the internal fistula opening under direct vision, endoscopic treatment of the fistula and closure of the internal opening which can be accomplished through firing a stapler, cutaneous-mucosal flap, or direct closure using suture. **Conclusion:** Video-assisted anal fistula treatment is feasible, reproducible, and safe. It enables direct visualization of the fistula tract, internal opening and secondary paths.

**Keyword:** Rectal fistula, surgical procedures, minimal invasive, fecal incontinence, *Crohn's disease*

## Introduction:

Anorectal fistula constitutes an epithelized path establishing a communication between the rectum or anal canal and the perianal region. In up to 90% of the cases, the origin of the fistula is cryptoglandular<sup>7</sup>. In only 10% *Crohn's disease*, trauma, malignancies, infection, or radiation therapy can be the cause of disease<sup>5</sup>.

The disease is more frequent between the third and fifth decade of life. The clinical manifestations are anal itching, discomfort and pain associates to a recurrent *mucopurulent* discharge sometimes with blood. The diagnosis is usually made by clinical history and physical examination. Diagnostic confirmation and obtaining additional information about the path, degree of sphincter involvement and presence of associated collections are usually performed selectively using *endoanal* ultrasound and dedicated magnetic resonance imaging.

Healing of anorectal fistula can only be achieved through surgery. The main objectives of surgical treatment include symptom abolishment and preservation of anal continence. The most often used techniques include one-step *fistulotomy* or *fistulectomy* and two-step *fistulotomy* with cutting or drainage seton placement. One or two-step *fistulotomies* presuppose sphincter transection. Therefore, an unpredictable degree of sphincter dysfunction must be expected after traditional surgical treatment of anal fistula.

The combination of a *video-endoscopic* approach to a minimally invasive procedure led to the proposal of the video-assisted anal fistula treatment (VAAFT). One of the main steps to the successful surgical treatment of anorectic fistula is the exact location of the internal fistula opening. VAAFT uses an innovative feature, a rigid *fistuloscope* for the correct location of the internal opening and to study the fistulous tract looking for collections or accessory paths. One of the major potential benefits of VAAFT technique is to undertake a procedure without direct trauma to the anal sphincters. Moreover, it results in very small surgical wounds. The use of the traditional techniques for the surgical treatment of anal fistulas are associated to a postoperative risk of fecal incontinence up to 45%. VAAFT does not affect fecal continence; however, it may be associated with a recurrence rate of 30%. However, reoperations may be conducted using the same technique<sup>6</sup>.

The objective of this paper is to describe the technique and initial experience with the VAAFT technique for anal fistula treatment.

## Patient selection

### Indication

- All discharging, fistula, which include
- Mature fistula
- Medium to high fistula with well-formed single or multiple tracks
- Complex fistula (recurrent fistula, horse shoe fistula)

### Contraindication



- *Submucous* fistula
- Low perianal fistula
- Fistula with acute /recent inflammation (immune track)
- Pelvic fistula(diagnosed by MRI)
- Fistula secondary to systemic pathology (*crohn's disease, tuberculosis, actinomycosis*)

### Instruments<sup>7</sup>



- *Fistuloscope*
- 3 mm forceps
- Endo-brush
- Unipolar electrode
- Ano-scope
- Linear *endostapler*
- Glycine 1%
- *volkmann* spoon

### Operation technique

Position- lithotomy position

### Instrument arrangement

*fistuloscope* is connected to the light source and loaded with the *obturator*

irrigation tubing done with 1% glycine solution

### Surgical procedure

the total process is complete in 2 phase

- diagnostic phase

- operative phase

### Diagnostic phase<sup>8</sup>

The purpose of this phase is to correctly identification of internal fistula opening and search for any secondary tracts or abscess cavities. We insert the fistuloscope through the external opening with the glycine-mannitol solution already running. Sometimes the external opening is surrounded by very tough scar tissue, so we have to remove this in order to allow easy entry of the fistuloscope. We put the fistuloscope against it and wait for the glycine solution to open the fistula tract. Then, we insert the fistuloscope along the pathway using slow movements, left/right and up/down. These manoeuvres allow the fistula to accommodate the fistuloscope, and the fistula is straightened. Optimal vision of the lumen of the fistula is ensured by the continuous jet of irrigation solution reaching as far as the internal opening, which is the end of the fistula tract. After this we insert a retractor. The fistuloscope usually exits through the internal opening. Sometimes the internal opening is very narrow and the location of the orifice can only be identified by observing the fistuloscope light behind the rectal mucosa. The surgeon places two or three sutures at two opposite points of the margin of the internal opening in order to isolate it but not to close it for the time being

### Operative phase<sup>9</sup>

In this phase destruction of the fistula from the inside will be done, cleansing of the fistula tract and finally closure of the internal opening. First, we remove the *obturator* and replace it with the electrode, which destroys the fistula tract under continuous direct vision. We proceed centimeter by centimeter from the external opening to the internal opening, cauterizing all fragments of the whitish



material adhering to the fistula wall and taking care not to overlook any abscess cavities or any possible fistula tract. Continuing under direct vision, necrotic material is removed with an endo-brush, or when the fistula is straight, with a Volkmann spoon. The continuous jet of the irrigation solution also ensures that all waste material is eliminated into the rectum through the internal opening, which has been isolated by stitches, but not yet closed. At this point, the surgeon returns to the rectum. The assistant maintains tension on the threads in order to lift up the internal fistula opening so that it has the shape of a volcano. A stapler is then inserted at the base of the volcano completing the mechanical cutting and suturing. This procedure can be performed by a semicircular stapler or a linear stapler (roticulator), depending upon the position of the internal opening. The final result is simply a scar in the area where the internal opening was previously located. When the tissue of the internal opening is thick and tough, the use of the stapler can be difficult and we prefer to close it by fashioning a cutaneous or mucosal flap.

### Discussion

Current surgical techniques for treating anal fistulas are based on three main principles: identification of the tract and the internal opening, excision of the fistula tract and preservation of anal sphincter function. Fistulotomy/fistulectomy is the gold standard in the treatment of anal fistulas with only minor involvement of the sphincters. Complex fistulas are very challenging for the surgeon because of the high incidence of bowel control impairment after these traditional surgical approaches. The rationale of the VAAFT technique is based on the concept of both detection and perfect closure of the internal fistula opening, in addition to the destruction of the pathway and cleaning which will allow complete and definitive healing. There is great variation in both technical difficulty and

efficacy among other sphincter-preserving options for complex *cryptoglandular* fistulas.

The latest conservative technique reported in literature is the ligation of *inter sphincteric* fistula tract (LIFT) procedure. This approach consists of ligation of the tract in the *inter sphincteric* space, curettage of the tract and closure of the external anal sphincter defect with sutures. This technique, like VAAFT, is based on the principle of a secure closure of the tract near the internal opening and makes possible healing rates ranging from 57 to 94.4%. Critical points of this technique are that ligation in the *inters phincteric* space may be technically demanding for high fistula tracts and for tracts ascending into the *inter sphincteric* plane and crossing the external anal sphincter at a higher level than that of the internal sphincter. Moreover, the exposure of the *inter sphincteric* plane can damage the blood supply to the internal anal sphincter and breach the anal mucosa, leading to a high risk of failure. In any event, the procedure leaves more or less extensive perianal skin wounds, which is not the case with VAAFT. Athanasiadis et al. using a technique of excision of the internal opening, of the *inter sphincteric* tract and of the entire tract up to the external anal sphincter, with a triple suture line designed to close the internal and the external sphincter has reported a technique more invasive and excisional than VAAFT and other surgeons adopting a similar procedure obtained a 59% healing rate. Sir Alan Parks originally proposed a treatment for high anal fistulas consisting of excision of the internal opening with a portion of internal anal sphincter and the *cryptoglandular* tissue with enlargement of the external opening and curettage of the tract. This approach is based on the principle of “curing” the tract and avoiding division of the external anal sphincter.

### Conclusion:

The VAAFT technique is a minimally invasive and safe technique. The advantages of



this technique are evident: it is performed as day surgery, there are no surgical wounds on the buttocks or in the perianal region, and there is complete certainty regarding the location of the internal fistula opening (a key point in all surgical treatment of fistulas). This is coupled with evidence of complete destruction of the fistula from the inside without damage to the anal sphincters. Moreover, the patient does not have postoperative problems with faecal incontinence. VAAFT appears cost effective, requiring a shorter and less expensive preoperative work-up than traditional techniques. The kit is reusable and although the expensive technology involved increases the initial costs of VAAFT, secondary costs are cut by same day discharge, a short recovery period and an early return to work.

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