

## A Prospective Study on treatment of Perianal Fistula by Video Assisted Anal Fistula Treatment (VAAFT)

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### Abstract

**Background:** Video-assisted anal fistula treatment (VAAFT) is a novel minimally invasive and sphincter-saving technique for treating complex fistulas. The present study was planned with an objective to assess the late post operative complications (discharge and recurrence), outcome with VAAFT technique day care, sphincter saving procedure in management of peri anal fistula. **Methodology:** The present prospective study was conducted on 50 patients of Perianal fistula admitted in Sir T General Hospital, Bhavnagar during September 2015 to September 2016. All of them underwent Video Assisted Anal Fistula Treatment (VAAFT) and were followed up immediately post operatively for pain and wound infection. They were also followed after 1 month and 3 months for pain/discomfort on defecation. **Results:** 26 (52%) patients had intersphincteric fistula, 20(40%) had transphincteric fistula while 4(8%) had sinus track. The cure rate was 94%. Median operating time was 35 minutes; mean pain score on the day of surgery was 5.3. Six (12%) patients had serous discharge on 15<sup>th</sup> day while only 3 (6%) patients had on 3 month follow up. On 3 month follow up, 47 (94%) patients having healed external opening. Recurrence was found in 3(6%) patients and no patient had complaint regarding stool incontinence on 3 month follow up. **Conclusion:** The advantages from the present study showed no surgical wound on the perianal region, hospital stay for 1 day, and higher cure rate at three month follow-up with low recurrence rate. The patient

does not have postoperative problems with faecal incontinence.

**Keywords:** Perianal Fistula; Video Assisted Anal Fistula Treatment (VAAFT); Recurrence.

### Introduction

Anal fistula, or fistula-in-ano, is a chronic abnormal communication between the epithelialised surface of the anal canal and (usually) the peri anal skin. Despite ages of research and development, the precise causes of this disease in its most common, cryptoglandular variant are still unknown. It is also a common problem for patients with the anorectal form of Crohn's Disease. Anal fistulas per se do not generally harm, but can be very painful, and can be irritating because of the pus-drain (it is also possible for formed stools to be passed through the fistula); additionally, recurrent abscesses may lead to significant short term morbidity from pain, and create a nidus for systemic spread of infection [1].

For most cases the only treatment modality is surgery. Although the fistulotomy/fistulectomy procedure is still considered the "gold standard" of treatment, nevertheless the risk of serious complications remains an issue. Some measure of fecal incontinence continues to affect 10%-45% of patients operated upon [2], with success rates varying from 70% to 90% [3].

Over the last few years, many novel attempts have been made to treat complex anal fistulas with minimally invasive techniques including ligation of the intersphincteric fistula tract (the LIFT procedure), anal fistula plugs and the utilization of commercially available fibrin glues [4]. In the present study, a new technique, video-assisted anal fistula treatment

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(VAAFT) developed by the first author (P.M.) in 2006 was used for the treatment of anal and perianal fistula. The main features of this technique include the ability to view the fistula from the inside so that it can be eradicated under direct vision using a fistuloscope. The goals of the VAAFT procedure are accurate identification of the internal opening and the secondary tracts or abscess cavities with formal closure of the internal opening.

## Materials and Methods

In our study we have included total 50 patients, who have been admitted in Sir T General Hospital, Bhavnagar during September 2015 to September 2016 and diagnosed to have symptomatic peri anal fistula. All of them underwent Video Assisted Anal Fistula Treatment (VAAFT) after treatment patients were followed up immediately post operatively for pain, fever, and wound infection. They were also followed after 1 month and 3 months for pain/discomfort on defecation.

### *Surgical Technique*

Video-Assisted Anal Fistula Treatment is performed with a kit which includes a fistuloscope, manufactured by Karl Storz GmbH (Tuttlingen, Germany), an obturator, a unipolar electrode and an endobrush. The fistuloscope has an 8 angled eyepiece and is equipped with an optical channel and also a working and irrigation channel. Its diameter is 3.3 to 4.7 mm, and its operative length is 18 cm. A removable handle allows easier manoeuvring. The fistuloscope has two taps one of which is connected to a 5,000 ml bag of glycine-mannitol 1% solution, depending on the position of the fistula.

### *Video Assisted Anal Fistula Treatment*

The goals of VAAFT is destruction of the fistula from the inside, 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 centimetre by centimetre 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. In any event, the internal fistula opening must be closed. After completing the procedure wash given with betadine and hydrogen peroxide. Small wick of gauge piece dipped in betadine and hydrogen peroxide solution inserted through external opening.

## Results

It was observed that maximum cases 36 (72%) were in the age group of 30-50 years. In our study 50 patients underwent video assisted anal fistula treatment out of which 44 (88%) were male and 6 (12%) were female.

It was seen that 37 (74%) patients were having seropurulent discharge, 11 (22%) were having pain and 2 (4%) were having occasional bleeding as presenting complaint (Table 2). Among the diagnostic procedure, 38 (76%) were diagnosed by MRI and 12 (24%) by Digital Sinogram. Among 50 patient of peri-anal fistula, 26 (52%) patients had intersphincteric fistula, 20 (40%) patient had transsphincteric fistula while 4 (8%) patient had sinus track.

All the cases were treated by Video Assisted Anal Fistulectomy (VAAFT). Only 3 (6%) had undergone conventional method of fistulectomy due to recurrence after VAAFT while 47 (94%) cases had no complications. Median operating time was 35 minutes for VAAFT procedure. The mean pain score on the day of surgery was 5.3. On 1st post operative day mean pain score was 4.9 and on 2nd post operative day it was 4.08.

In the present study follow up examinations were made on 15 days, 1 month and 3 month. Among 50 patient, 6 (12%) patients were having serous discharge on 15<sup>th</sup> day, 4 (8%) patients were having serous discharge on 1 month follow up while only 3 (6%) patients having serous discharge on 3 month follow up. On 3 month follow up, 47 (94%) patients having

healed external opening with no discharge. Recurrence was found in 3 (6%) patient on 3 month follow up. No patient had complaint regarding stool incontinence on 3 month follow up.

In VAAFT procedure, hospital stay is 1 day which is better for patient. VAAFT surgery patient having healed external opening within 12 to 15<sup>th</sup> post operative period which indicate it is better than conventional method.

**Table 1:** Age and gender distribution of cases

Age	No. (%)
10-20	0
20-30	3 (6)
30-40	14 (28)
40-50	22 (44)
50-60	07 (14)
60-70	3 (6)
70-80	1 (2)
<b>Gender</b>	
Male	44 (88)
Female	6 (12)

**Table 2:** Distribution of presenting complaint

Presenting Complaint	No. (%)
Sero-purulent discharge	37 (74)
Pain	11 (22)
Bleeding	2 (4)

**Table 3:** Findings at follow-up visits

Follow up	Serous discharge	External opening healed	Recurrence
15 days	6 (12%)	44(88%)	-
1 month	4(8%)	46(92%)	-
3 month	3(6%)	47 (94%)	3 (6%)

**Table 4:** Post-operative hospital stay and healing time

Postoperative hospital stay	Range of period	Median period
Fistulotomy	1- 4 days	1. 5 days
Fistulectomy	1- 6 days	2. 5 days
<b>Healing time</b>	<b>Range of healing time</b>	<b>Average healing time</b>
Fistulotomy	18- 30 days	24 days
Fistulectomy	28- 42 days	35 days

## Discussion

The results of the VAAFT surgery in initial days for minimally invasive treatment of perianal fistulas were optimistic, ranging from 73% up to 92% of success rates for short term follow-up [5]. VAAFT is de-signed based only on these two key points: it provides real-time visualization of the anatomy; therefore, surgeons can properly handle the internal opening and ensure sufficient drainage of the debrided tract.

In the present study, the cure rate was 94%. The study conducted by Elbarbary H. M et al [6]. showed an overall success rate of 84% with a cure rate of 92% after 24 months follow up. On the other hand, failure

of such procedure in 2 cases was attributed to the fact that some fistula tracts were horseshoe, or totally sclerosed and fibrotic subsequently making progress of the scope impossible or dangerous. In such cases they adopt the fistulotomy technique with or without Seton according to the situation.

In the study conducted by Kochhar G et al [5]. the recurrence rate was 15.85%, with recurrences developing in 13 cases. Postoperative pain and discomfort were minimal. In the study conducted by Liu H et al. [7], Complication included bleeding and perianal infection in 1 case respectively. After 1 to 3.2 months follow-up, success rate was 72.7% (8/11), and no faecal incontinence was observed.

In the present study, Median operating time was

35 minutes for VAAFT procedure. In the study conducted by Elbarbary H. M et al [6] operative time was reduced to 30 minutes, comparable to Meinero and Mori [8]. Elbarbary H. M study also demonstrates the efficacy VAAFT in the management of complex PAF with IO located in 92% of cases with the lowest recurrence of 8%, compared to 17% in the fistulotomy group which could be distressing to patients and with minimal accepted complications. In the study conducted by Liu Het al. [7], the mean operative time was (42.0±12.4) min, mean hospital stay was (4.1±1.5) days.

In the present study no patient had complaint regarding stool incontinence on 3 month follow up. Continence was evaluated in this study and it showed that VAAFT is a real novel sphincter saving technique with minimal or no effect on anal continence (zero incontinence) unlike fistulotomy which carries the risk of some degree of incontinence ranging from minor incontinence to major fecal incontinence if not used judiciously. Fistulotomy carries the risk of some degree of incontinence ranging from minor incontinence which was 33% in this study [6].

### Conclusion

The VAAFT technique is a minimally invasive and safe technique for the management of Simple and complex anal fistula while preserving anal sphincter function. The advantages from the present study showed no surgical wound on the perianal region, hospital stay on 1 day, and higher cure rate at three month followup with low recurrence rate. 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.

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