

## Original Research Article

# VAAFT versus fistulectomy in the management of anorectal fistulae: a comparative study?

Mahidhar Reddy Venkatapuram, Sreeram Sateesh\*

Department of General Surgery, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India

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**\*Correspondence:**

Dr. Sreeram Sateesh,

E-mail: mahiesweb@gmail.com

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### ABSTRACT

**Background:** Among the perianal diseases Fistula in ano is a very common condition bringing lot of discomfort to the patient with a high rate of recurrence as well. Conventionally fistulectomy has been the treatment of choice for fistula-in-ano. But the procedure is associated with lot of recurrence, morbidity and sphincter incontinence. Among several recent procedures VAAFT-video assisted anal fistula treatment is gaining popularity. So, we conducted this study to know the effectiveness of VAAFT over conventional fistulectomy.

**Methods:** This prospective comparative study was undertaken to compare VAAFT and fistulectomy in the management of fistula-in-ano. A one-year study was carried out on 50 patients from mid-2015 to 2016. A visual analogue scale (VAS) was used to assess pain in the postoperative period. All patients were observed for one-year period for any recurrence of disease. Results were statistically analysed by SPSS 15.0 software.

**Results:** two groups were formed among the 50 patients selected for study. There was male preponderance in both the groups. majority of patients belonged to 31-40 years of age group. Majority of the patients had low anal fistulae followed by patients with high anal fistulae and anorectal fistulae in that order. There was recurrence of disease in 12% of people operated by fistulectomy whereas it was only 1% in group who underwent VAAFT.

**Conclusions:** VAAFT procedure offered significantly less recurrence rates in comparison with fistulectomy. There was less postoperative pain and nil complications after surgery. Patient satisfaction was high. Our study concluded VAAFT as a safe and effective procedure alternative to conventional fistulectomy.

**Keywords:** Anorectal fistulae, Fistula-in-ano, Fistulectomy, Video assisted anal fistula treatment (VAAFT), Visual analogue scale (VAS)

## INTRODUCTION

Fistula-in-ano is one of the commonest encounters in surgical clinics dealing with anorectal diseases.<sup>1</sup> Fistulae develop when an infected perianal gland forms an abscess and ruptures into anal canal on one side and perianal skin on the other side. There are different types of fistulae with respect to their course through anal sphincter-subcutaneous, intersphincteric, trans-sphincteric, supra-sphincteric and extrasphincteric.<sup>2</sup> As defined by goods

all's rule, fistulae anterior to the transverse line drawn across anal canal in lithotomy position, tend to have a simple and straight course whereas those posterior to the said line tend to have a complex curved pathway.

Fistula-in-ano is known for its branches. These fistulae by nature of their chronicity and complexity pose a challenge to the surgeon. Conventional fistulectomy procedure where entire fistulous tract is laid open, brings lot of postoperative pain, takes more time to heal and has

high recurrence rates ranging from 10% to 45%. Another important problem is injury to anal sphincter resulting in incontinence. Of the newer methods being tried VAAFT-video assisted anal fistula treatment is showing promising results.<sup>3,4</sup>

VAAFT can be used both for diagnostic and therapeutic purpose. This procedure doesn't involve tissue cutting and laying open of tract. It's a minimally invasive procedure where fistulous tract is probed with a scope and the entire tract visualized till the internal opening, which is closed with stitch and the entire length of tract cauterized n scrapped of its infected lining epithelium.in the process localized collections are also drained. Hence to confirm the meritorious effects of VAAFT over conventional fistulectomy, and know patient satisfaction, this study was designed.<sup>5,6</sup>

## METHODS

This prospective comparative study was undertaken to compare conventional fistulectomy and newer VAAFT procedure in the management of fistula-in-ano. The study was conducted from august 2015 to august 2016 on about 50 patients consulting general surgery department, Narayana medical college and hospital, Nellore. Every patient was informed of the procedure and consent taken. The plan of study was submitted to hospital ethics committee and their approval was taken.

All patients with first presentation of fistula-in-ano were included in this study. Patients with recurrent fistulae, with diseases like Crohns, tuberculosis and anorectal malignancies (which present with multiple perianal fistulous openings), with immune suppressed conditions and with supra-sphincteric extension of tracts were excluded from this study. Patients were divided into two groups with 25 patients in each group.

Surgeons with at least 5years of experience in anorectal surgeries and who have undergone training for VAAFT procedure were selected. Visual analogue scale (VAS) was used to assess subjective pain on the first and second postoperative days and documented.<sup>7</sup> The VAS scale ranged from 0 to 5, where 0 stands for no pain and 5 stands for worst pain ever faced. After discharge all patients were followed for a period of year and any recurrence of the disease noted. Any complications occurring in the postoperative period and during follow-up were noted.

## Statistical analysis

Data was analyzed with SPSS 15.0 statistical software (SPSS inc. Illinois, USA) and a descriptive statistical analysis was carried out in this study. Microsoft word and Excel were used to note details and generate tables etc. Results were presented using Mean $\pm$ SD and as actual numbers and percentages in categorical data. Group significance was measured by Unpaired t test, ANOVA and Chi-square test. P value if it was less than 0.05 (p<0.05) was considered significant statistically.

## RESULTS

Among the 50 patients selected for study there was male preponderance in both the groups. Male: female ratio was 5.25:1 in group A. It was 4:1 in group B. Majority of patients belonged to 31-40 years of age group. The median age of presentation in group A was 38yrs whereas it was 40yrs in group B. Majority of the patients had low anal fistulae followed by patients with high anal fistulae and anorectal fistulae in that order.<sup>8,9</sup> Time taken for surgery in minutes, was assessed for both the groups and it was expressed as Mean $\pm$ Standard deviation. We noticed that VAAFT required just half of the time required for conventional fistulectomy.<sup>10-12</sup>

**Table 1: Clinical characteristics and outcomes between fistulectomy versus VAAFT.**

| Clinical parameters                    | Group A -25 (fistulectomy) | Group B-25 (VAAFT) | P value |
|----------------------------------------|----------------------------|--------------------|---------|
| Age in years                           | 38 $\pm$ 1.2               | 40 $\pm$ 2.4       | p<0.05  |
| Gender Male/Female                     | 21/4                       | 20/5               | P<0.05  |
| Type of fistula low/high/anorectal     | 16/8/1                     | 17/7/2             | P<0.05  |
| Pain on VAS-1 <sup>ST</sup> postop day | 3.64 $\pm$ 1.4             | 0.96 $\pm$ 0.2     | P<0.05  |
| Pain on VAS-2 <sup>nd</sup> postop day | 2.11 $\pm$ 1.3             | 0.24 $\pm$ 0.1     | P<0.05  |
| Complications                          | 3 cases                    | 0                  | P>0.05  |
| Recurrence                             | 5 cases                    | 0                  | P>0.05  |
| Operative time in minutes              | 37.5 $\pm$ 2.4             | 19.2 $\pm$ 1.5     | P<0.05  |
| Time to return to work in days         | 8.2 $\pm$ 1.7              | 3.7 $\pm$ 0.8      | P<0.05  |
| Patient satisfaction                   | Good-14                    | Good-23            | P<0.05  |
|                                        | Not satisfied-11           | Not satisfied-2    |         |

After surgery pain was measured for all patients on visual analogue scale (VAS). For patients who underwent

fistulectomy the VAS score was above 3 on first postop day and above 2 on second postop day, whereas, for

patients who underwent VAAFT the VAS score was always less than 1 on first and second postoperative days.<sup>13</sup> Any complications like bleeding, infection and incontinence were noted. 3 cases undergoing fistulectomy, developed complications, in which two of them had postoperative bleeding which was controlled by anal packing and one of them had perianal infection needing additional antibiotics and slough excision.<sup>14,15</sup> There were no complications in patients who underwent VAAFT. When patients were followed up, there was recurrence of disease in 20% of people operated by fistulectomy, whereas there was no recurrence in group who underwent VAAFT.<sup>16,17</sup>

Recurrence was defined as persistence of fistula at the same site or reappearance of any new fistula at the operated site. time needed to return to work in days was also calculated for both the groups and expressed as mean $\pm$ SD. Patients who underwent VAAFT returned to work in half of the time that was required by people who underwent conventional fistulectomy.

Overall patient satisfaction was assessed by asking them the same on a two-point scale, at their third follow-up visit i.e. After 2 months. More than 90% of people were satisfied with VAAFT procedure whereas it was only near 50% in those who underwent fistulectomy. The following table shows the statistical details of the study.

## DISCUSSION

Fistula-in-ano can be labelled as one of the diseases with high incidence and high recurrence rates posing a challenge to coloproctologists. High recurrence rates can be attributed to epithelialization of fistulous tracts, branching and complexity of fistulous tracts, and the inadequateness of conventional fistulectomy procedure.in conventional fistulectomy where the entire fistulous tract is cut and laid open, has high chances of sphincter injury, as most of the fistulae cross the sphincter muscles.

Patients have to bear the perianal wound till it heals giving lot of pain, discomfort and loss of quality working days. Hence, for all the above reasons, conventional fistulectomy procedure is not advisable. Kronborg et al and Farquahsan EL. Operations in rectum and anal canal, discussed in detail the nature and presentations of fistula-in-ano. Several newer methods have come into vogue like injection of foam into the tract, seton application, MAFT (minimally invasive anal fistula treatment), plugging the tract, LIFT, VAAFT etc.<sup>18-22</sup> Fistula plugging is being practiced in some centres. A. Herold A. Ommer A. Fürst et al. In their study, "Results of the Gore Bio-A fistula plug implantation in the treatment of anal fistula", showed the effectiveness of plugging over conventional fistulectomy.

Some centres are using seton application as an alternative to fistulectomy. García-Aguilar J, Belmonte C, Wong DW, Goldberg SM, Madoff RD, in their study, "Cutting

seton versus two-stage seton fistulotomy in the surgical management of high anal fistula", discussed the advantages of seton application over conventional fistulectomy.

LIFT (ligation of intersphincteric tract) is being followed in few centres and its usefulness was discussed by Shanwani A, Nor AM, and Amri N, in their study- "Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano," and also by. Lange EO, Ferrari L, Krane M, Ficherain A, their study- "Ligation of Intersphincteric fistula tract: a sphincter-sparing option for complex fistula-in-ano,". But the problem with above three newer methods-plugging, seton and LIFT, is that they can't be used in all types of fistula.<sup>23,24</sup>

The more the complexity of fistula the lesser their effectiveness.in VAAFT procedure any type of fistula can be dealt with.<sup>25</sup> As we are directly visualising the fistulous tract and its branches, the disease can be cleared into to. Hence, VAAFT is gaining wide acceptance. Its minimally invasive and also both diagnostic and therapeutic.<sup>26</sup> in VAAFT there is no cutting of sphincter muscles.<sup>27</sup> Fistulous tract is just probed, under video guidance entire tract is cauterized and scraped of its infected epithelium, abscess if any drained, and internal opening ligated under vision.

Hence, patients experience minimal postoperative pain, with negligible complications and very less recurrence rate. Meinero P, Mori L et al in their study- (2011) Video-assisted anal fistula treatment (VAAFT): a novel sphincter-saving procedure for treating complex anal fistulas, concluded the effectiveness and advantages of VAAFT procedure.

The above prospective comparative study done at our center emphasized the effectiveness of VAAFT procedure. Among 25 patients who underwent VAAFT none had recurrence and complications. Almost all of them had negligible postoperative pain when compared to their counterparts.so our study concurred with Meinero P et al study in the effectiveness of VAAFT over conventional fistulectomy.<sup>12,13,28</sup>

## CONCLUSION

In comparison with conventional fistulectomy, VAAFT excels with its negligible postoperative pain and almost nil complications and recurrence rates.

Hence, we conclude VAAFT as an effective alternative to conventional fistulectomy in the management of fistula-in-ano.

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## REFERENCES

1. Keighley MRB, Williams NS. Surgery of the anus, rectum and colon. 3<sup>rd</sup> Edition. London: W. B. Saunders company Ltd, 1993.
2. Kronborg O. To lay open or excise a fistula-in-ano: a randomized trial. *Br J Surg.* 1985;72(12):970.
3. Buchanan GN, Bartram CI, Phillips RK, Gould SW, Halligan S, Rockall TA, et al. Efficacy of fibrin sealant in the management of complex anal fistula. *Dis Colon Rectum.* 2003;46(9):1167-74.
4. Meinerio P, Mori L. Video-assisted anal fistula treatment (VAAFT): a novel sphincter-saving procedure for treating complex anal fistulas. *Tech Coloproctol.* 2011;15(4):417-22.
5. Farquahsan EL. Operations in rectum and anal canal: Fistula-in-ano. In: Rintoul HF, editor. *Textbook of operative surgery.* 5<sup>th</sup> ed. Edinburgh: Churchill Livingstone; 1971:732-733.
6. García-Aguilar J, Davey CS, Le CT, Lowry AC, Rothenberger DA. Patient satisfaction after surgical treatment for fistula-in-ano. *Dis Colon Rectum.* 2000;43(9):1206-12.
7. Wewers ME, Lowe NK. A critical review of visual analogue scales in the measurement of clinical phenomena. *Res Nurs Health.* 1990;13(4):227-36.
8. Williams JG, Farrands PA, Williams AB, Taylor BA, Lunniss PJ, et al. The treatment of anal fistula: ACPGBI position statement. *Colorectal Dis.* 2007;9(4):18-50.
9. Malik AI, Nelson RL. Surgical management of anal fistulae: a systematic review. *Colorectal Dis.* 2008;10(5):420-30.
10. Grolich T, Skricka T, Robek O, Kala Z, Hemmelová B, Hrivnák R. Role of Video Assisted Anal Fistula Treatment in our management of fistula-in-ano. *Acta Chirurgica Iugoslavica.* 2014;61(2):83-5.
11. Schwandner O. Video-assisted anal fistula treatment (VAAFT) combined with advancement flap repair in Crohn's disease. *Tech Coloproctology.* 2013;17(2):221-5. [PubMed]
12. Walega P, Romaniszyn M, Nowak W. VAAFT: a new minimally invasive method in the diagnostics and treatment of anal fistulas - initial results. *Pol Przegl Chir.* 2014;86:7-10. [PubMed]
13. Mendes C, Ferriera L, Sapocaia R, Lima M, Araujo S. Video-assisted anal fistula treatment: technical considerations and preliminary results of the first Brazilian experience. *ABCD Arq Bras Cir Dig.* 2014;27(1):77-81. [PMC free article] [PubMed]
14. Bubbers EJ, Cologne KG. Management of complex anal fistulas. *Clinics in Colon Rectal Surg.* 2016;29(1):43-9.
15. Steele SR, Kumar R, Feingold DL, Rafferty JL, Buie WD. Practice parameters for the management of perianal abscess and fistula-in-ano. *Dis Colon Rectum.* 2011;54(12):1465-74.
16. Dudukgian H, Abcarian H. Why do we have so much trouble treating anal fistula?. *WJG.* 2011;17(28):3292-6.
17. Wałęga P, Romaniszyn M, Nowak W. VAAFT: a new minimally invasive method in the diagnostics and treatment of anal fistulas-initial results. *Polish J Surg.* 2014;86(1):7-10.
18. Garcia-Aguilar J, Belmonte C, Wong W, Goldberg DW, Madoff RD. Cutting seton versus two-stage seton fistulotomy in the surgical management of high anal fistula. *Br J Surg.* 1998;85(2):243-5.
19. Mohite JD, Gawai RS, Rohondia OS, Bapat RD. K-sharsootra (medicated seton) treatment for fistula-in-ano. *Indian J Gastroenterol.* 1997;16(3):96-7.
20. Chowbey PK, Khullar R, Sharma A, Soni V, Najma K, Baijal M. Minimally invasive anal fistula treatment (MAFT)- an appraisal of early results in 416 patients. *Indian J Surg.* 2015;77(2):716-21.
21. Herold A, Ommer A, Fürst A, Pakravan F, Hahnloser D, Strittmatter B, et al. Results of the Gore Bio-A fistula plug implantation in the treatment of anal fistula: a multicentre study. *Techniques in Coloproctol.* 2016;20(8):585-90.
22. Wallin UG, Mellgren AF, Madoff RD, Goldberg SM. Does ligation of the intersphincteric fistula tract raise the bar in fistula surgery?. *Dis Colon Rectum.* 2012;55(11):1173-8.
23. Shanwani A, Nor AM, Amri N. Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. *Dis Colon Rectum.* 2011;53(1):39-42.
24. Lange EO, Ferrari L, Krane M, Fichera A. Ligation of intersphincteric fistula tract: a sphincter-sparing option for complex fistula-in-ano. *J Gastrointestinal Surg.* 2016;20(2):439-44.
25. Seow-En I, Seow-Choen F, Koh PK. An experience with video-assisted anal fistula treatment (VAAFT) with new insights into the treatment of anal fistulae. *Techniques Coloproctol.* 2016;20(6):389-93.
26. Kochhar G, Saha S, Andley M, Kumar A, Saurabh G, Pusuluri R, Bhise V, Kumar A. Video-assisted anal fistula treatment. *JLS.* 2014;18(3).
27. Liu H, Xiao Y, Zhang Y, Pan Z, Peng J, Tang W, et al. Preliminary efficacy of video-assisted anal fistula treatment for complex anal fistula. *Chinese J Gastrointestinal Surg.* 2015;18(12):1207-10.
28. Parks AG, Stitz RW. The treatment of high fistula-in-ano. *Dis Colon Rectum.* 1976;19(6):487-99.

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