International Journal of Medicine Research
ISSN: 2455-7404; Impact Factor: RJIF 5.42
Received: 09-01-2019; Accepted: 13-02-2019
www.medicinesjournal.com
Volume 4; Issue 2; April 2019; Page No. 45-48

Video assisted anal fistula treatment and fistulectomy in treatment of anal fistulas: A comparative study

Dr. Gopinath Pai[1], Dr. Sachin Balkrishna Oak[2], Dr. Varun Khullar[3], Dr. Hemanth Kumar Nune[4]

[1] Professor, Department of General Surgery, KVG Medical College Hospital, Sullia, Dakshin Kannada, Karnataka, India

[2, 3, 4] Resident, Department of General Surgery, KVG Medical College Hospital, Sullia, Dakshin Kannada, Karnataka, India

Abstract

Aims and Objectives: Fistula-in-ano is a complex problem in anorectal surgery. The nature of the disease makes it a psychosocial morbidity. Despite the advances, the ideal treatment remains elusive. One of the recent treatment options is video-assisted anal fistula treatment (VAAFT). The aim of our study is to study the epidemiology of the disease and compare the results of VAAFT with fistulectomy for treatment of fistula-in-ano.

Methods: This is a randomized comparative interventional study that includes 70 patients with the diagnosis of simple fistula-in-ano. Patients were randomly divided into two groups: Group F (fistulectomy) had 36 patients and Group V (VAAFT) had 34 patients. Both groups were evaluated according to the operative time, post-operative hospital stay, pain, analgesia requirement, postoperative complications, time of wound healing, fecal incontinence, and recurrence.

Results: Both groups were comparable for baseline demographic variables. Post-operative hospital stay was less in group V, 1.85 days compared to group F, 7.03 days (p-value <0.001). Post-operative pain was significantly less in group V compared to group F. Total analgesia requirement was less in in group V, 2.94 vs 7.69 (p<0.001). Post-operative complaints such as bleeding, infection and urinary retention were less in group V but the difference was statistically insignificant. Wound healing was significantly faster in group V, 97.1% at 1 month compared to 55.6% in group F (p<0.001). The incidence of fecal incontinence and recurrence was also compared but difference was insignificant. Mean operative time was higher in group V, 62 vs 35.14 (p-value < 0.01).

Conclusion: VAAFT is a minimally invasive, sphincter-saving procedure offering many advantages like short hospital stay, less pain, faster wound healing and low morbidity. Our initial results with the procedure are encouraging but larger studies are needed to arrive at definite conclusions.

Keywords: anorectal surgery, VAAFT

Introduction

Fistula-in-ano is a complex problem in anorectal surgery. The nature of the disease makes it a psychosocial morbidity. Most fistulas are thought to result from blocked anal glands present in the anal valves resulting in crypto glandular infection, leading to formation af an abscess adjacent to the ano-rectal tube. These fistulas are a consequence of rupture of perianal abscesses. As the abscess cavity ruptures it creates a tract between the anal canal and the epithelial lining of the perianal skin. The site, chronicity of the disease course associated with the nature of the symptoms like purulent discharge, staining of clothes makes it a psychosocial morbidity in a healthy person. Lack of awareness and negligence has lead to incomplete and inefficient treatment of this disease frequently by non-medical people has resulted in recurrence of the disease and worse, unwanted complications. The last few decades has seen tremendous progress in understanding the nature of the disease, which in turn has led to better management.

Despite all the advances the fact remains that an "ideal" procedure for anal fistula remains elusive. The failure of each sphincter-preserving procedure (30%-50% recurrence) often results in multiple operations [1]. Traditional techniques including fistulectomy and the use of a cutting seton have been associated with an incontinence rate approaching 12% in simple fistulas and more in complicated cases [2]. There are reports in the literature of recurrence rates after surgery of 20% even in simple fistulas largely because of a failure to identify these secondary tracks and the site of the internal opening [3]. Video-assisted anal fistula treatment (VAAFT) is a novel minimally invasive and sphincter-saving technique for treating fistulas. 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.

The aim of our study is to study the epidemiology of the disease and compare the results of VAAFT with fistulectomy for treatment of fistula-in-ano.

Methods

The study group was patients admitted to the surgery department of KVG Medical College Hospital and diagnosed as case of anorectal fistula from December 2016 to April 2018. After history taking and detailed physical examination Diagnosis was confirmed and patients were randomized into two groups by simple randomization using computer generated random numbers.

GROUP V (Study Group): The patients in this group underwent VAAFT.

GROUP F (Control Group): The patients in this group underwent Fistulectomy.

Outcome Variables
1. Duration of surgery
2. Post-operative pain
3. Post-operative analgesia requirement
4. Post-operative bleeding
5. Post-operative urinary retention
6. Post-operative infection
7. post-operative incontinence
8. Duration of hospital stay

Follow up Period
Post operatively patients were followed up for a period of 3 months for healing, pain, incontinence and recurrence.

Inclusion Criteria
Patients admitted in Surgery Department, KVG Medical College Hospital and diagnosed to have fistula in ano.

Exclusion Criteria
- Patients less than 15 years and more than 70 years of age.
- Recurrent cases of fistula in ano.
- Cases of complex fistula in ano (High fistulas, fistulas having multiple tracts, fistulas involving other organs)
- Patients diagnosed as secondary to malignancy on biopsy.
- Patients diagnosed as Crohn's disease on sigmoidoscopy or colonoscopy.
- Patients diagnosed as tubercular fistulas on biopsy.
- Patients in whom VAAFT could not be done and had to undergo conversion.
- Patients who are unfit for spinal or light general anesthesia.

Statistical analysis
The data was analysed using standard statistical study (SPSS 12).

Study Design
The study was a hospital based randomized comparative interventional study.

Results
Total of 70 subjects were included in the study, 36in fistulectomy group and 34 in VAAFT group. Mean age of patients was 39.96± 9.21 years. Mean age in F group subjects was 39.22 years and V group was 40.74 years. No statistically significant difference of age was present between the groups (p value >0.05).
Out of 70 patient 55 (78.6%) were males and 15 (21.4%) were females. In fistulectomy group out of 36 patients 27 (75%) were males whereas 9 (25%) were females. In VAAFT group out of 34 patients 28 (82.4%) were males and 6 (17.6%) were females. No statistically significant difference of sex was present between the groups (p value >0.05).

Position of External Opening
Out of 70 patient 22 (31.4%) had anterior fistulas and 48 (68.6%) had posterior fistulas. In fistulectomy group out of 36 patients 12 (33.3%) had anterior fistulas whereas 24 (66.7%) had posterior fistulas. In VAAFT group out of 34 patients 10 (29.4%) had anterior fistulas and 24 (70.6%) had posterior fistulas. There is no statistically significant difference of distribution of external opening between the groups (p value >0.05).

Duration of surgery
Mean duration of surgery in Fistulectomy group was 35.14 minutes and 62 minutes in VAAFT group. The duration was significantly shorter in F group as compared to V group (p-value<0.001).

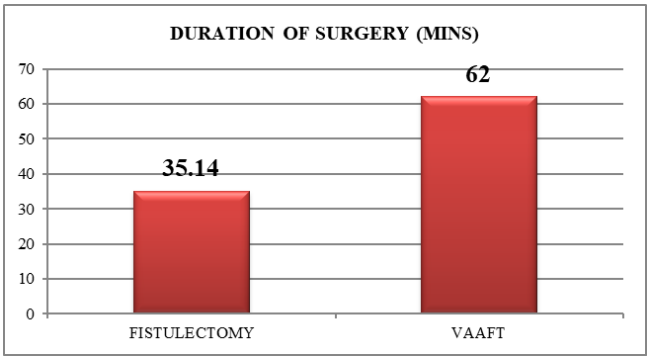

Fig 1

Duration of hospital stay
Mean duration of hospital stay in Fistulectomy group was 7.03 days as compared to 1.85 days in VAAFT group. The duration was significantly shorter in V group as compared to F group (p-value<0.001).

Comparison of Post-Operative Pain Assessed By Vas between Two Groups
Post-operative pain assessed by VAS scale was analyzed by 2 sample t-test. Mean for pain at 12 hours after surgery was 6.68 in F group and 4.88 in V group, at 24 hours5.72 in F group and 4.03 in V group, at 48 hours4.83 in F group and 3.18 in V group. The pain perception was significantly higher in F group as compared to V group (p-value <0.001) at 12 hours, 24 hours and 48 hours.

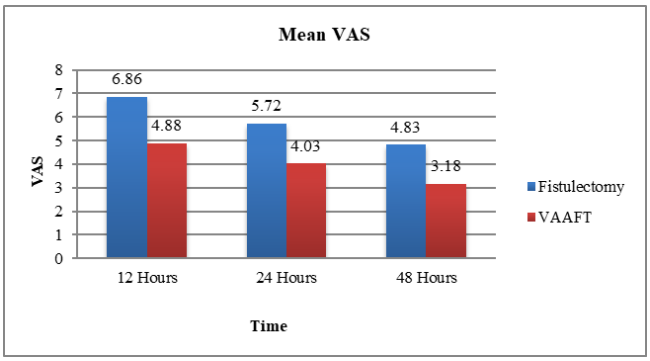

Fig 2

Requirement of Total Dose of Analgesia
Total dose of analgesia requirement was significantly higher in Group F (mean = 7.69 ampoules of tramadol) as compared to Group V (mean = 2.94 ampoules of tramadol) (p-value<0.001). One ampoule of tramadol= 100 mg of tramadol.

Post-Operative Bleeding
Post-operative bleeding was seen in 2 patients (5.55%) in F group whereas no cases of post-operative bleeding were seen in V group. Both the cases of post-operative bleeding were of posterior fistulas treated by fistulectomy. There is

no statistically significant difference of bleeding (p-value >0.05) between the groups nor is there any statistical difference of bleeding in anterior fistulas treated by fistulectomy versus VAAFT or posterior fistulas treated by fistulectomy versus VAAFT.

Post-Operative Urinary Retention

Post-operative urinary retention was seen in 4 patients (11.11%) in F group and 1 patient (2.9%) in V group. All 4 cases of post-operative urinary retention in F group were posterior fistulas and 1 case of post-operative urinary retention in V group was of anterior fistula. There is no statistically significant difference of post-operative urinary retention (p-value >0.05) between the groups nor is there any statistical difference of post-operative urinary retention in anterior fistulas treated by fistulectomy versus VAAFT or posterior fistulas treated by fistulectomy versus VAAFT.

Post-Operative Fecal Incontinence

Post-operative fecal incontinence was seen in 3 patients (8.3%) in F group whereas no case of post-operative fecal incontinence was seen in V group. 1 case of post-operative fecal incontinence was of anterior fistula treated by fistulectomy and rest 2 were of posterior fistulas treated by fistulectomy. There is no statistically significant difference of post-operative fecal incontinence (p-value >0.05) between the groups nor is there any statistical difference of post-operative fecal incontinence in anterior fistulas treated by fistulectomy versus VAAFT or posterior fistulas treated by fistulectomy versus VAAFT.

Healing of Fistula Track on Follow Up

On follow up at 1st month and 3rd month, fistula track healing was assessed. On follow up at 1st month complete healing of fistula track was present in 20 cases (55.6%) of fistulectomy and in 33 cases (97.1%) of VAAFT group. The difference in post-operative wound healing was statistically significant at 1 month (p-value <0.001). When fistula track healing was compared in anterior fistulas at 1 month, the difference in post-operative wound healing was statistically significant (p-value<0.05) similarly fistula track healing was compared in posterior fistulas and the difference was statistically significant (p-value<0.01).

On follow up at3rd month complete healing of fistula track was present in 34 cases (94.4%) of fistulectomy and in 34 cases (100%) of VAAFT group. The difference in post-operative wound healing was statistically insignificant at 3 months (p-value>0.05). When fistula track healing was compared in anterior fistulas at 3 months, the difference in post-operative wound healing was statistically insignificant (p-value>0.05) similarly fistula track healing was compared in posterior fistulas and the difference was statistically insignificant (p-value>0.05).

Recurrence on Follow Up.

On follow up at 1st month and 3rd month, fistula recurrence was assessed. On follow up at 1st month fistula recurrence was present in 1 cases (2.7%) of fistulectomy and in 0 cases (0%) of VAAFT group. The difference in fistula recurrence was statistically insignificant at 1 month (p-value >0.05). When fistula recurrence was compared in anterior fistulas at 1 month, the difference in recurrence was statistically insignificant (p-value>0.05).

On follow up at 3rd month recurrence was present in 3 cases (8.3%) of fistulectomy and in 0 cases (0%) of VAAFT group. The difference in fistula recurrence was statistically insignificant at 3 months (p-value>0.05).

Discussion

The mean age of presentation in our study was 39.96 ± 9.21 years. Maximum incidence of fistula in ano was in 31-40 years 44.3%. About 75% patients were between the age of 31-50 years.

In a study by Sainio P (1984) the mean age of the patients was 38.3 years [4]. Sirikurnpiboon S *et al.* (2013) reported mean age of 40.78 ± 11.84 years, range: 21-71 years [5]. Robert Beaulieu *et al.* (2013) reported mean age as 40 years [6].

Hence mean age reported in our study was comparable to mean age reported in other studies.

In our study 68.6% of cases were posterior fistulas and 31.4% of cases were anterior fistulas. V. Abeysuriya *et al.* (2010) reported the variable regional occurrence of fistula-in-ano and found that 51% were anterior and 49% were posterior to transverse line [7].

In Fistulectomy group 12 patients had anterior fistula whereas 24 patients had posterior fistula (1:2), in VAAFT group 10 patients had anterior fistula and 24 patients had posterior fistula (1:2.4). The distribution of anterior and posterior fistulas between the two groups was comparable (p value > 0.05).

In our study 100% of the patients complained of discharge from the fistula.

Pain was a complaint by 45 (64%) patients in our study, whereas Vasilevsky and Gordon recorded a history of anal pain in 34% [8].

Mean duration of surgery for fistulectomy in our study was 35.14 ± 5.92 minutes.

The mean duration for VAAFT in our study was 62 ± 9.97 minutes.

There was statistically significant difference in the operative time for fistulectomy when compared to VAAFT (p-value < 0.001), with a higher operative time in VAAFT due to minimal invasive approach and a long learning curve.

The present study has observed that VAAFT significantly decreases postoperative pain as evident by the marked difference in the mean visual analogue pain scale score (VAS) of the two groups. The pain perceptions was significantly higher in F group as compared to V group mean 6.86 vs 4.88 at 12hours (p-value < 0.001), 5.72 vs 4.03 at 24 hours (p-value < 0.001) and 4.83 vs 3.18 at 48 hours (p-value < 0.001) post-operatively.

Total dose of analgesia requirement was significantly high in fistulectomy group as compared to VAAFT group. This corresponds to the significantly high VAS score in fistulectomy group as compared to the VAAFT group.

Post-operative urinary retention was seen in 4 patients (11.1%) following fistulectomy, post-operative urinary retention was 6.3% out of 349 patients who underwent fistulectomy in a study by Toyonaga *et al.* in 2006 [9].

Post-operative urinary retention was present in 1 (2.9%) patient following VAAFT.

Post-operative infection was seen in 3 patients (8.3%) following fistulectomy, Roig *et al.* in 1999 reported 1 case (3.2%) of post-operative infection after fistulectomy [10].

No patient had post-operative infection following VAAFT in our study.

On follow up at 1st month minor incontinence was seen in 3

patients (8.3%) who underwent fistulectomy, which reduced to 2 patients (5.6%) at 3rd month follow up.

In patients who underwent VAAFT post-operative incontinence at 1stmonth and 3rd month was nil.

VAAFT ensures adequate localization of internal opening and management of the fistula tract without damaging the anal sphincter complex. Hence VAAFT is a sphincter preserving technique with minimal or no effect on anal incontinence.

Fistula recurrence was noted in 1 (2.8%) patient at 1st month follow up after fistulectomy and in 3 (8.3%) patients at 3rd month follow up.

In patients who underwent VAAFT recurrence at 1st month and 3rd month was nil.

Conclusion

This study has demonstrated that there is a significant difference between fistulectomy and VAAFT in terms of hospital stay, post-operative pain and analgesia requirement and also healing time, which are all less for VAAFT.

The chances of post-operative bleeding, post-operative infection, and incontinence were also lower in VAAFT but the difference was not significant.

The mean operative time was higher in VAAFT.

The advantage of VAAFT over other techniques lies in its ability to correctly identify the internal opening, which is a key point in surgical treatment of fistula in ano. This is coupled with the ability to destruct the tract from inside under vision without any chance of damaging the anal sphincter complex.

Due to minimally invasive approach, the duration of hospital stay is less and the post-operative pain is minimal.

There is no damage to anal sphincter complex so the rate of post-operative incontinence is nil, making the procedure quiet acceptable and tolerable, hence patient satisfaction is more.

The disadvantage is long operative time, which can be reduced as the learning curve improves and initial cost of treatment, which is high due to expensive technology involved but secondary costs are cut by same day discharge, a short recovery period and an early return to work.

The initial results in our hand have been very encouraging but we would have to wait for long term results and studies on a larger group of patients to come to definite conclusions.

References

1. Dudukgian H, Abcarian H. Why do we have so much trouble treating anal fistula? World J Gastroenterol. 2011; 17(28):3292-3296.
2. Ritchie RD, Sackier JM, Hodde JP. Incontinence rates after cutting seton treatment for anal fistula. Colorectal Dis. 2009; 11:564–571.
3. Sangwan YP, Rosen L, Riether RD, Stasik JJ, Sheets JA, Khubchandani IT. Is simple fistula-in-ano simple? Dis Colon Rectum. 1994; 37:885-889.
4. Sainio P. Fistula-in-ano in a defined population. Incidence and epidemiological aspects.Ann Chir Gynaecol. 1984; 73(4):219-24.
5. Sirikurnpiboon S, Awapittaya B, Jivapaisarnpong P. Ligation of intersphincteric fistula tract and its modification: Results from treatment of complex fistula. World J Gastrointest Surg. 2013; 5(4):123-8.
6. Beaulieu R, Bonekamp D, Sandone C, Gearhart S. Fistula-in-ano: When to Cut,Tie, Plug, or Sew.J Gastrointest Surg. 2013; 17:1143-52.
7. Abeysuriya V, Salgado LSS, Samarasekera DN. The distribution of the anal glands and the variable regional occurrence of fistula-in-ano: is there a relationship?. Tech Coloproctol. 2010; 14:317-21.
8. Vasilevsky CA. and Gordon PH. The incidence of recurrant abscesses or fistula-in-ano following anorectal suppuration. Dis Colon Rectum. 1984; 27:126-130.
9. Toyonaga Takayuki, Matsushima Makoto, Sogawa Nobuhito, Feng Jiang Song Matsumura, Naomi Shimojima Yasuhiro, Tanaka Yoshiaki, *et al*. Postoperative urinary retention after surgery for benign anorectal disease: Potential risk factors and strategy for prevention. International journal of colorectal disease, 2006.
10. Roig Garcia Armengol, Jordán Alos, Solana. Immediate reconstruction of the anal sphincter after fistulectomy in the management of complex anal fistulas. Colorectal Disease. 1999; 1:137-140.