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Early Postoperative Pain in Video Assisted Anal Fistula Treatment Versus Open Fistulectomy

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ABSTRACT

Introduction: Anal fistulas are chronic anorectal infections with constant pus containing discharge from the perianal region which can only be treated surgically.

Aims & Objectives: To compare mean duration of post-operative pain in patients undergoing video-assisted treatment (VAAFT) with patients who were cared for with an open fistulectomy.

Place and Duration of Study: This randomized controlled trial was conducted in the Surgical Department of Chaudhry Mohammad Akram Hospital, Lahore from 1st March 2022 to 31st August 2022. After necessary permission and approval from Ethics Committee and Research Department of Azra Naheed Medical College, Lahore. 60 patients who were assessed according to inclusion criteria of this study were taken.

Materials and Methods: 60 patients of both genders who had presenting complaint of anal fistula were randomly assigned to two groups (n=30) each. Group A were provided video-assisted fistula treatment and Group B with open fistulectomy approach. Physiological parameters as age, BMI and importantly postoperative pain were observed on 2nd day post procedure. SPSS version 20 was used to analyse the data, P-value<0.05 was taken as significant.

Results: The range of age included was from 18 to 50 years with mean age of 38.6+5.8 years in group A and 40.933+5.4 years in group B (p=0.11), mean duration of anal fistula was 9.13+1.8 weeks in group A and 9.06+2.1 weeks in group B(P=0.89). Patients in group A had a mean BMI of 27.1±1.62 Kg/m² while patients in group B had a mean BMI of 27.5±1.73 Kg/m² (p=0.36). The mean duration of each procedure was 21.4+1.37 minutes in group A and 38.300+1.46 minutes in group B(p<0.001). Mean postoperative pain was 0.333±0.09 on VAS score in group having VAAFT and 2.200±0.18 in group having open fistulectomy (p<0.001).

Conclusion: In comparison with conventional fistulectomy, VAAFT seems to be superior with almost no complications post operatively and less pain.

Keywords: Anal fistula, video-assisted anal fistula treatment, fistulectomy, postoperative pain.

INTRODUCTION

Anal fistulas are defined as a chronic anorectal infection with the clinical features of constantly recurring pus-containing discharge and/or intermittent pain that leads to abscess formation and occasional intermittent decompression[1]. The most effective management of this condition remains to be surgery which still poses to be a challenging task, even for well experienced surgeons. The goal of operation for anal fistula are to achieve adequate and complete healing as well as maintenance of anal continence. There are two types of surgical approaches in treating fistula-in-anu; Sphincter-sacrificing and sphincter-sparing techniques, with the latter having better healing and less post-operative anal incontinence rates and better postoperative life due to which its rising in popularity amongst surgeons[2]. Recently, new surgical techniques have come into practice i.e; Ligation of intersphincteric fistula tract (LIFT), fibrin glue injection, anal fistula plug or video-assisted anal fistula treatment. These procedures are known for their variable success rates, however more studies are needed to further prove effectiveness and validity. About 90% of all anal fistula are caused by crypto glandular infection. There are several sphincter-sparing techniques that have high recurrence with some degree of anal incontinence. Because such procedures are with variable risks, they are considered complicated, thus demanding expertise, well-experienced hands. Advance modern technology and equipment can also be an alternative for better management. The already available treatment options have not been proved productive, making it necessary to look for newer techniques. Treatment options of crypto glandular fistulas will be discussed in this study[3]. Fistulectomy, a past procedure has an acceptable outcome making it a recommendation for low lying fistulas. Fistulectomy has high success rate

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in terms of symptomatic relief of patients and low anal incontinence with up to 93% to even 100% success if the operating hands are experienced[4]. VAAFTis a new treatment modality for complex anal fistulas, is minimally invasive and belongs to Sphincter-saving group[2]. The technique is comprised of an initial phase known as diagnostic phase, during which an 18cm fistuloscope having an 8˚ angled eyepiece is passed through the external fistulous opening. To open the fistula tract solution of glycine-mannitol is used[5]. In a study by Venkatapuram MR, et al. the mean post operative pain was 0.24+0.1 in video assisted anal fistula treatment versus 2.11-1.3 in open fistulectomy[6]. In a study by Zarin M, et al. which concludes that in 50% cases primary healing achieved in 6 weeks. While minor discharge associated with itching was noted in the rest of 42.5% cases, the resolution period for the later was during follow up at 8 weeks and 12 weeks following video assisted anal fistula treatment[7].

No comparative study on this subject has been done before in Pakistan. As far as the current research is concerned there is only one study on video assisted anal fistula treatment is found so far which was case series with focus on healing rate only. Furthermore, the conclusive results of international studies cannot be applied to the local practice mostly due to a clear contact in genetic makeup and confounding variables. This prompted the researchers to compare the mean post operative pain after video assisted anal fistula treatment versus open fistulectomy. The objective of this study is to help choose the right treatment option for anal fistula in our local population and to compare mean of post operative pain in patients after video assisted anal fistula treatment versus open fistulectomy.

MATERIAL AND METHODS

This randomized controlled trial was conducted in the Surgical Department of Chaudhry Mohammad Akram Hospital, Lahore from 1st March 2022 to 31st August 2022. After necessary permission and approval from Ethics Committee and Research Department of Azra Naheed Medical College, Lahore. 60 patients enrolled were assessed according to inclusion criteria of this study. All participants were given a detailed briefing regarding the study, their purpose of participation, involved treatment options and associated benefits and risks following which informed consents were taken from every participant. Sequentially numbered opaque envelopes generated through randomly numbered table used to randomise the study subjects into two groups.30 patients were in video assisted anal fistula treatment group or Group A while 30 patients were in open fistulectomy group or Group B.

Sample size was calculated with 95% Confidence Level with power = 80% and a= 5%. By using postoperative pain Mean USD 0.24+0.1 in video assisted anal fistula treatment and 2.11+1.3 in open fistulectomy.

The enrolled patients were of both genders, varying in age from 18 to 50 years had anal fistulas for more than 6 weeks. Any patient with history of recurrent fistulae, Crohn's disease, diabetes, pregnancy, tuberculosis and anorectal malignancies on medical record was excluded. Patients were divided into Group A who underwent VAAFT, during this procedure proper equipment under use was connected to a camera as part of surgical video-endoscopy equipment. The whole kit comprised of fistuloscope, one brush, a mono-polar electrode and a single set of endoscopic forceps. For fistula tract destruction fistuloscope was equipped with an 8˚angled rigid telescope, under direct vision through the activation of mono-polar electrode cauterisation of the tract was done all the way from external orifice to internal opening. The area was cleared of necrotic materials with the help of jet irrigation and abrasion was performed through a brush. Employing VAAFT, internal opening was closed carefully during surgery. Alternatively, through firing and endoscopic stapler or Mucosal advancement flap internal opening was repaired. Patients in group B underwent through open fistulectomy during which first a keyhole incision was made over the fistulous tract and after that external opening was encircled. The incision was advanced deeply passing through the subcutaneous tissue removing the tract from surrounding tissues. In the next phase all those fibres of the sphincters which were lying over the fistulous tract were incised towards the anal verge. Special attention was paid to look for secondary tracts during removal of the tract. Patients were advised regarding proper aseptic wound care. In addition to that special emphasis on high-fibre diet was given. All of the patients were followed up on 1st and 2nd postoperative day. Patients who did not come to follow-up were contacted by their contact numbers and were reminded about their follow up visit. Postoperative pain was noted on 2nd post-op day using a unique pain scale designed on a proforma.

Statistical analysis program (IBM-SPSS version

20) was used to analyse the data. Comparison of the outcomes between the two groups was made. For categorical variables like gender and grade of fistula, percentages and frequencies were calculated. While for numerical variable like age, duration of fistula, Body mass index (BMI), procedure duration and post-operative pain, Mean ± SD was calculated. Both groups were compared for postoperative pain. Mean postoperative pain of each group was tested using the student t-test.

RESULTS

Patients included were 18 to 50 years with mean age of 38.6±5.8 years in group A and 40.933±5.4 years in group B (p= 0.11), mean duration of anal fistula was 9.13±1.8 weeks in group A and 9.06±2.1 weeks in group B (p= 0.89), mean BMI was 27.1±1.62 Kg/m2 in group A and 27.5±1.73 Kg/m2 in group B (p=0.36).

Variable		Group A n=30	Group B n=30	P-Value
Age		38.6±5.81	40.9±5.36	0.11
Gender	Male	27(90%)	25(83.3%)	0.7
	Female	3(10)	5(16.7%)	
Grades of Anal Fistula	3	10(40%)	12(33.3%)	0.8
	4	16(36.7%)	14(40%)	
	5	4(6.7%)	4(10%)	
Duration of Procedure (Minutes)		21.4±1.37	38.3±1.46	<0.001
BMI (kg/m^2)		21.3±1.62	27.5±1.73	0.36

Table-1: Baseline Characteristics of study population.

There was significant difference between operative times of both procedures. Mean Procedure duration was 21.4±1.37 minutes in group A and 38.300±1.46 minutes in group B (p<0.001). Mean post-operative pain was 0.333±0.09 on VAS score in group A and 2.200±0.18 in group B, being significantly high in group B (p<0.001).

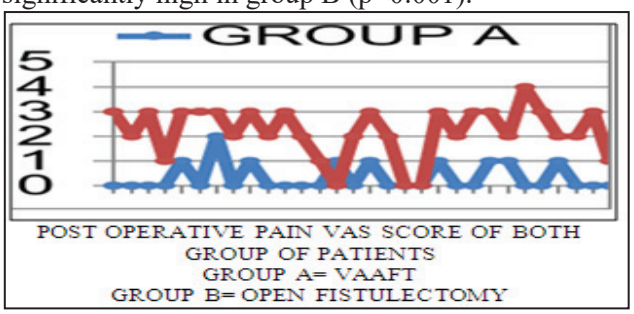

Fig-1: Visual Analogue Score in Both Groups of patients.

DISCUSSION

Anal fistula is characterized as one of the diseases which have high incidence as well as recurrence rates making it a challenging disease for the colpoproctologists. High rate of recurrence can is because of epithelialization, branching and complexity of fistulous tracts. In conventional fistulectomy whole tract is removed having increased risk of incontinence of stool during to sphincter damage.

Preoperatively patients are counseled about sequelae of the surgery including pain at surgical site, days off from work till healing begins. Because of high post operative immediate complications open conventional fistulectomy is not advisable. Kronborg et al and Farquahasan EL discussed about the nature and presentations of fistula-in-ano. Newer techniques introduced are injection of foam into the fistulous tract, seton placement, MAFT (minimally invasive anal fistula treatment), fibrin plugging of the fistulous tract, LIFT, VAAFT etc[8,12]. A.Herold et al (2016) their study, "Results of the Gore Bio-A fistula plug implantation in the treatment of anal fistula", reported plugging of fistulous tract is more efficacious over open conventional fistulectomy.

Seton placement is also being practiced in some hospitals. García-Aguilar J et al in their study, stated benefits of seton.

LIFT as a surgical technique is practiced in some centre's and its efficacy was discussed by Shanwani A et al and also by. Lange EO et al. Seton Placement, LIFT and newer plugging techniques can't be used in all types of anal fistulas[13,14].

Complex anal fistulas are difficult to treat with conventional surgery but with VAAFT no matter how complex the tract is it can be directly visualized[15]. VAAFT is becoming a popular technique to treat Anal Fistulas due to its minimal invasiveness and also both diagnostic and therapeutic treatment modality[16]. VAAFT is also a sphincter saving procedure[17], in which fistulous tract is just probed under vision and cauterization and fulguration of the fistulous tract is done with scraping of the infected epithelium, drainage of the abscess cavity and ligation of the internal opening undervideo assistance. After VAAFT procedure patients experience minimal postoperative pain, with almost no complications. Meinero P et al in their study concluded the effectiveness of VAAFT as a treatment modality to treat Complex as well as Simple Anal Fistulas.

In our study mean postoperative pain was 0.333±0.09 on VAS score in group A and 2.200±0.18 in group B (p<0.001). In a study by Venkatapuram MR, et al. they concluded that mean post operative pain was 0.24+0.1 in video

assisted anal fistula treatment versus 2.11+1.3 in open fistulectomy[6].

In a study by Zarin M, et al. they came up with findingsthat time taken for primary healing was 6 weeks in 50%. On the other hand, they noted that minimal discharge associated with itching was observed in the rest of 42.5% cases, the later group was recovered during follow up after 8 weeks and 12 weeks after video-assisted anal fistula treatment[7]. Another study carried out VAAFT procedure in 25 patients and reported that 84% of the patient's had significant improvement in postoperative pain making VAAFT a feasible and safe procedure to be carried out in complex anal fistulas[21].

We carried out a prospective study to establish efficacy of VAAFT, performed this procedure in thirty patients none of which developed any recurrence or any of the post procedure complications like incontinence of stools, pain. Hence our study is in accord with Meinero P et al which favors VAAFT over open fistulectomy it terms of its efficency[18,20].

CONCLUSION

In conclusion, VAAFT excels over conventional fistulectomy, in that the postoperative pain is of minor character, requiring a brief operative time. Hence, for treatment of Anal fistulaVAAFT serves to be an effective alternative treatment compared to fistulectomy.

REFERENCES

1. Limura E, Giordano P. Modern management of anal fistula. World J Gastroenterol. 2015;21(1):12–20.
2. 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.
3. Sheikh P, Baakza A. Management of fistula-in-ano—the current evidence. Indian J Surg. 2014;76(6):482-6.
4. Tozer P, Sala S, Cianci V. Fistulotomy in the tertiary setting can achieve high rates of fistula cure with an acceptable risk of deterioration in continence. J Gastrointest Surg. 2013;17(11):1960-5.
5. Khadia M, Muduli IC, Mallick SN. Current options in treatment of fistula-in-ano. J Evid Based Med Healthc. 2016;3(63):3458-61.
6. Venkatapuram MR, Sateesh S. VAAFT versus fistulectomy in the management of anorectal fistulae: a comparative study?. Int Surg J. 2017;4:3895-8.
7. Zarin M, Khan MI, Ahmad M, Ibrahim M, Khan MA. VAAFT: video assisted anal fistula treatment; bringing revolution in fistula treatment. Pak J Med Sci. 2015;31(5):1233-5.
8. 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.
9. 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.
10. 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.
11. 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.
12. Wallin UG, Mellgren AF, Madoff RD, Goldberg SM. Does ligation of the intersphincteric fistula tract raise the bar in fistula surgery?. Dise Colon Rectum. 2012;55(11):1173-8.
13. Shanwani A, Nor AM, Amri N. Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. Dis Colon Rectum. 201;53(1):39-42.
14. 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.
15. 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.
16. Kochhar G, Saha S, Andley M, Kumar A, Saurabh G, Pusuluri R, Bhise V, Kumar A. Video-assisted anal fistula treatment. JSLS. 2014;18(3).
17. 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.
18. 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.
19. 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]

20. Parks AG, Stitz RW. The treatment of high fistula-in-ano. Dis Colon Rectum. 1976;19(6):487-99.
21. Adegbola SO, Sahnan K, Tozer PJ, et al. Symptom amelioration in Crohn's perianal fistulas using video-assisted anal fistula treatment (VAAFT). Journal of Crohn's and Colitis. 2018 Aug 29;12(9):1067-72.

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