

Preliminary Results with Technical Considerations of Video-Assisted Anal Fistula Treatment (VAAFT)- The First Experience in Bangladesh



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Abstract

Background: Most anorectal fistula represents an epithelised 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.

Aim: To share our findings that the new treatment modality Video Assisted Anal Fistula Treatment (VAAFT) is a better alternative to the conventional treatments of Fistula in Ano in our setup with minor changes in the initial method described by Meinero.

Technique: Karl Storz Video Equipment was used. Key steps were visualization of the fistula tract using the fistuloscope, correct localization of the internal fistula opening under direct vision, endoscopic treatment of the fistula and closure of the internal opening. Diagnostic fistuloscopy under glycine irrigation was followed by an operative phase of fulguration of the fistula tract and closure of the internal opening using vicryl 1/0 suture.

Results: From March 2015 to June 2016, we operated on 14 patients using VAAFT. 12 patients were followed up for a minimum of six months. No major complications occurred. In most cases postoperative pain was acceptable. Primary healing was achieved in 11 patients (92%) within 3 months of operation. After a 6-month follow-up, recurrence was observed in one (08%) patient.

Conclusion: As the main aim in treating fistula is proper identification of the fistula tract with internal opening, excision of the tract and preserving the sphincter function, VAAFT achieves all the aims with additional benefits of patient's satisfaction and negligible scarring. Video-Assisted Anal Fistula Treatment (VAAFT) is feasible, reproducible, and safe. Our preliminary results are very promising.

Keywords: Anal fistula; Minimally invasive; Anal incontinence; VAAFT; Sphincter saving; Complex Anal fistula

Introduction

The overall prevalence of anal fistula is 8-10 cases per 100,000 individuals with male female ratio of 2:1. Anal fistula may have a primary etiology, resulting from an anorectal abscess or can develop secondary to trauma, tuberculosis, Crohn's disease, anorectal carcinoma & exposure to radiation. Among the treatment options available for anal fistula, there are both traditional &

novel techniques. Traditional methods include fistulotomy; fistulectomy & Seton placement are usually associated with incontinence. The newer treatment options include use of fibrin glue, bio-prosthetic plugs, mucosal advancement flaps & ligation of intersphincteric fistula tract (LIFT). These newer methods also have risk of incontinence as well as costly & need expertise. To overcome these difficulties Professor P. Meinero introduced a novel technique

named Video Assisted Anal Fistula Treatment (VAAFT) in 2006 [1-5]. We adopted the technique with some modification in March 2015 in an effort to reduce postoperative morbidity & to enable our patients to benefit from advantages of minimal invasive surgery.

Methods

Karl Storz Video equipment including Meirero Fistuloscope was used. Key steps are visualization of the fistula tract, correct localization of the internal fistula opening under direct vision and endoscopic treatment of the fistula. The procedure has two phases:

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- A. Diagnostic phase
- B. Operative phase

The purpose of the diagnostic phase is the correct identification of the fistula tract from the external to the inner opening and accessory tracts. The fistuloscope was then inserted through the external opening. Under continuous infusion of glycine solution, the fistuloscope was advanced through the fistula tract with direct visualization of the lumen [6-10]. The identification of incomplete secondary fistula tracts (meaning not associated with an external opening) is one of the major advantages of fistuloscopy when compared to conventional surgical exploration using a probe or methylene blue infusion. The purposes of the operative phase are destruction and cleaning of the fistula tract followed by management of the internal opening. For fistula tract destruction, the monopolar electrode was activated all the way under direct vision resulting in cauterization of the tract centimeter-by-centimeter from the level of the external orifice to the level of the internal opening. Jet irrigation and brush abrasion were used to remove necrotic material. The closure of the internal opening is another critical step to the cure of anal fistula. Its performance should be carefully conducted during surgery employing VAAFT. Here we used simple suture with vicryl 1/0 for closure of internal opening. We adopted certain modifications like no use of stapler and synthetic cyanoacrylate because of no availability and increasing cost of the procedure. Patients were anesthetized with spinal anaesthesia with lithotomy position. Preoperative single dose of 2nd generation cephalosporin was used and 1 dose of the same antibiotic was given post operatively. Postoperatively pain killer used were injectable opioids followed by oral pain killers for 3-5 days.

Results

This study was a prospective type of observational one, done with 14 cases of Fistula-in-Ano treated by a new method i.e. VAAFT (Video Assisted Anal Fistula Treatment). The study was conducted over a period of one year (i.e. March, 2015 to June, 2016) in the Department of Surgery of SSMC & Mitford Hospital & some private hospitals in Dhaka. General objective in the present study was to observe the short term outcome of VAAFT. Outcome of this procedure was assessed in different terms. In our study, among 14 patients, 11(79%) male and rest female patients were

operated with a male to female ratio 11:3. The mean age 37.3 years was almost similar of other studies mentioned above [11]. Most patients are from poor socioeconomic group (n=08, 57%). It does not indicate the predominance of fistula in Ano in this group but because most of the patients were from GOVT hospital.

All the patients presented with intermittent discharge (100%, n=14). The second most complaint was swelling (08 patients, 57%). Different studies support this findings [12]. During EUA; distance of external opening from the anal verge was measured. Majority of the cases i.e. in 9 cases (64%) external opening of the fistula tract was found within 4 cm from the anal verge. During the procedure, 11 (79%) patients had trans-sphincteric fistula. 10 (71%) patients were operated within 60-90 min. Degree of postoperative pain is a major determinant of patient satisfaction. We encouraged warm Sitz bath from first post-operative day to all patients but it could not spare the need for an analgesic.

Sitz bath was allowed to reduce postoperative pain due to its soothing effect as well as to keep perianal area less contaminated. Spinal Headache was the most common complication (n=2, 14%). 92% (11 cases) patients had excellent wound healing. In this study no anal incontinence was observed among the patients undergone VAAFT procedure. Incidence of anal incontinence was excluded by asking the patient for any leak of flatus, liquid or formed stool. All patients denied worsening of faecal continence postoperatively. In the study 12 (100%) patients were discharged in the 1st POD. Only 1 (8%) patients had recurrence. One patient was diagnosed as a case of malignancy & one patient didn't come for follow up. This occurs in between 1-4 weeks.

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 anal incontinence 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 fistula tract 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 crypto-glandular fistulas. Mucosal advancement flaps are technically challenging and are associated with recurrence rates that vary from 2 to 54% [10-14] as well as associated with postoperative incontinence, and the incidence of this complication has been reported to approach 35% in some series [14]. Fibrin glue injection is a technically easy, low-risk technique but results have been disappointing, showing success rates as low as 16% long term [15-20]. Similarly, the use of the anal fistula plug is a simple, sphincter sparing technique, but very expensive [21] and

with reported success rates ranging between 29% and 87% [22-26]. The latest conservative technique reported in literature is the ligation of intersphincteric fistula tract (LIFT) procedure. This approach consists of ligation of the tract in the intersphincteric 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% [5,27-29]. But this technique is not technically sound as well as having high risk of failure [30]. In any event, the procedure leaves more or less extensive perianal skin wounds, which is not the case with VAAFT. Recently, another novel technique for treating complex fistulas, fistula laser closure (FiLaC), has been proposed [31-33]. This approach, like VAAFT, is aimed at destroying the tract and preserving the sphincters, but it is a procedure performed blindly, without advantages in identifying the internal opening, secondary tracts and abscess cavities. The rationale of the VAAFT technique is based on the same principles as other procedures for closing the internal opening and obliterating the track, where the real innovation is the precise identification of the fistula anatomy and of the internal opening by fistuloscopy and fulguration of the tract walls under direct vision [34]. This approach allows the identification and treatment of all the secondary tracts, and the abscess cavities connected to the main pathway. In the group with six months follow-up, 92% of the patients healed. VAAFT involves an initial expenditure for purchasing the required equipment. However, the fistuloscope & ancillary equipment are reusable and the initial costs are likely to be recovered soon. The technique provides significant advantages to patients in terms of reduced pain, minimal morbidity & earlier resumption of normal activities. The global socioeconomic costs of this procedure are therefore likely to be low.

Conclusion

The VAAFT technique is a minimally invasive and safe technique. This method does not affect sphincter function, no intra- and postoperative complications were observed. As compared to other minimally invasive procedures a comparable recovery rate is observed without the risk of incontinence. It is the only method enabling the intra-operative identification of the internal opening and fistula canal under visual control. VAAFT appears cost effective, requiring a shorter and less expensive preoperative work-up than traditional techniques. Our experience is encouraging and needs a longer follow-up of larger series to be validated.

References

- Garcia AJ, Belmonte C, Wong WD, Goldberg SM, Madoff RD (1996) Anal fistula surgery. Factors associated with recurrence and incontinence. *Dis Colon Rectum* 39(7): 723-729.
- Sangwan YP, Rosen L, Riether RD, Stasik JJ, Sheets JA, et al. (1994) Is simple fistula-in-ano simple? *Dis Colon Rectum* 37(9): 885-889.
- Ritchie RD, Sackier JM, Hodde JP (2009) Incontinence rates after cutting seton treatment for anal fistula. *Colorectal Dis* 11(6): 564-571.
- Atkin GK, Martins J, Tozer P, Ranchod P, Phillips RKS (2011) For many high anal fistulas, lay open is still a good option. *Tech Coloproctol* 15(2): 143-150.
- Rojanasakul A (2009) LIFT procedure: a simplified technique for fistula-in-ano. *Tech Coloproctol* 13(3): 237-240.
- Lupinacci RM, Vallet C, Parc Y, Chafai N, Turet E (2010) Treatment of fistula-in-ano with the Surgisis(™) AFP(TM) anal fistula plug. *Gastroenterol Clin Biol* 34(10): 549-553.
- Cirocchi R, Santoro A, Trastulli S (2010) Meta-analysis of fibrin glue versus surgery for treatment of fistula-in-ano. *Ann Ital Chir* 81(5): 349-356.
- Parks AG, Stitz RW (1976) The treatment of high fistula-in-ano. *Dis Colon Rectum* 19(6): 487-499.
- Parks AG, Gordon PH, Hardcastle JD (1976) A classification of fistula-in-ano. *Br J Surg* 63(1): 1-12.
- Aguilar PS, Plasencia G, Hardy TG, Hartmann RF, Stewart WR (1985) Mucosal advancement in the treatment of anal fistula. *Dis Colon Rectum* 28(7): 496-498.
- Ozuner G, Hull TL, Cartmill J, Fazio VW (1996) Long-term analysis of the use of transanal rectal advancement flaps for complicated anorectal/vaginal fistulas. *Dis Colon Rectum* 39(1): 10-14.
- Schouten WR, Zimmermann DD, Briel JW (1999) Transanal advancement flap repair of transsphincteric fistulas. *Dis Colon Rectum* 42(11): 1419-1423.
- Mizrahi N, Wexner SD, Zmora O (2002) Endorectal advancement flap: are there predictors of failure? *Dis Colon Rectum* 45(12): 1616-1621.
- Sonoda T, Hull T, Piedmonte MR, Fazio VW (2002) Outcomes of primary repair of anorectal and rectovaginal fistulas using the endorectal advancement flap. *Dis Colon Rectum* 45(12): 1622-1628.
- Sentovich SM (2001) Fibrin glue for all anal fistulas. *J Gastrointest Surg* 5(2): 158-161.
- Buchanan GN, Bartram CI, Phillips RKS (2003) Efficacy of fibrin sealant in the management of complex anal fistula: a prospective trial. *Dis Colon Rectum* 46(9): 1167-1174.
- Sentovich SM (2003) Fibrin glue for anal fistulas: long-term results. *Dis Colon Rectum* 46(4): 498-502.
- Gisbertz SS, Sosef MN, Festen S (2005) Treatment of fistulas in ano with fibrin glue. *Dig Surg* 22(1-2): 91-94.
- Ellis CN, Clark S (2006) Fibrin glue as an adjunct to flap repair of anal fistulas: a randomized, controlled study. *Dis Colon Rectum* 49(11): 1736-1740.
- Williams JG, Farrands PA, Williams AB (2007) The treatment of anal fistula: ACPGBI position statement. *Colorectal Dis* 9(Suppl 4): 18-50.
- Adamina M, Hoch JS, Burnstein MJ (2010) To plug or not to plug: a cost-effectiveness analysis for complex anal fistula. *Surgery* 147(1): 72-78.
- Johnson EK, Gaw JU, Armstrong DN (2006) Efficacy of anal fistula plug vs. fibrin glue in closure of anorectal fistulas. *Dis Colon Rectum* 49(3): 371-376.
- Christoforidis D, Etzioni DA, Goldberg SM (2008) Treatment of complex anal fistulas with the collagen fistula plug. *Dis Colon Rectum* 51(10): 1482-1487.
- Lawes DA, Efron JE, Abbas M (2008) Early experience with the bioabsorbable anal fistula plug. *World J Surg* 32(6): 1157-1159.
- Malik AI, Nelson RL (2008) Surgical management of anal fistulae: a systematic review. *Colorectal Dis* 10(5): 420-430.

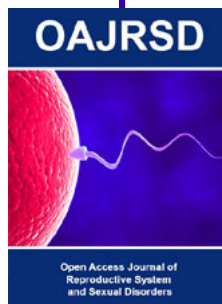
26. Wang JY, Garcia-Aguilar J, Sternberg JA, Abel ME, Varma MG (2009) Treatment of transsphincteric anal fistulas: are fistula plugs an acceptable alternative? *Dis Colon Rectum* 52(4): 692-697.
27. Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K (2007) Total anal sphincter saving technique for fistula-in-ano: the ligation of intersphincteric fistula tract. *J Med Asso Thai* 90(3): 581-586.
28. Shanwani A, Nor AM, Amri N (2010) Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. *Dis Colon Rectum* 53(1): 39-42.
29. Bleier JI, Moloo H, Goldberg SM (2010) Ligation of the intersphincteric fistula tract: an effective new technique for complex fistulas. *Dis Colon Rectum* 53(1): 43-46.
30. Lunniss PJ (2009) LIFT procedure: a simplified technique for fistula-in-ano. *Tech Coloproctol* 13(3): 241-242.
31. Athanasiadis S, Helmes C, Yazigi R, Kohler A (2004) The direct closure of the internal fistula opening without advancement flap for transsphincteric fistulas-in-ano. *Dis Colon Rectum* 47(7): 1174-1180.
32. Thomson WH, Fowler AL (2004) Direct appositional (no flap) closure of deep anal fistula. *Colorectal Dis* 6(1): 32-36.
33. Wilhelm A (2011) New technique for anal fistula repair using a novel radial emitting laser probe (FILACTM). *Tech Coloproctol* 15(4): 445-449.
34. Ortiz H, Marzo M, De Miguel M (2008) Length of follow-up after fistulotomy and fistulectomy associated with endorectal advancement flap repair for fistula in ano. *Br J Surg* 95(4): 484-487.



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