

Video-Assisted Anal Fistula Treatment in the Management of Fistula-in-Ano: A 3-Year Experience

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Abstract

Background: Fistula-in-ano and especially the high and complicated type is still one of the difficult surgical problems to solve. The new promising technique, video-assisted anal fistula treatment (VAAFT) was done first by Professor P. Meinero in 2006. **Objective:** The objective of the study was to describe the technique and the encouraging result of VAAFT. **Materials and Methods:** Using Karl Storz Company fistuloscope, 200 patients with anal fistulas were treated in Babylon Private Hospital in Al Hilla (Center of Babylon Governorate). This was done in two phases: diagnostic phase including visualization of fistula tract and identification of internal opening, followed by the operative phase by cauterization, curettage of the tract, irrigation using 1% mannitol solution, and closure of the internal opening using no. 1 Vicryl (polyglactin). **Results:** From the 200 patients with anal fistulas, 40 patients (20%) had undergone classical fistula surgery. No major complications were recorded. Early and late postoperative pain and discomfort were mild. The cases followed up at 6 weeks and 3 months postoperatively. Primary healing rate was 70% at 12 weeks and 74% at 3-month follow-up. The overall healing rate percent after 1 year was 80%. **Conclusion:** VAAFT is a safe, sphincter-saving, painless procedure and can be done as a day case with promising preliminary results, and we can repeat the treatment till cure is achieved.

Keywords: Anal fistula, meinero fistuloscope, video-assisted anal fistula treatment

INTRODUCTION

Fistula-in-ano is the most common benign anorectal disease.^[1] It is commonly of cryptoglandular etiology, developing from a perianal abscess and communicating the anal mucosa with the skin surface which forms 90% of cases,^[2] or it could develop secondary to trauma, infection, radiation, or chronic granulomatous infections (tuberculosis and actinomycosis).^[3] Fistula-in-ano is more common in men than women.^[4]

Fistula-in-ano classified according to Parks classification to four types: intersphincteric, transsphincteric, suprasphincteric, and extrasphincteric while using simplest system of classification, to low type (95%) and a high type which forms about 5%.^[5]

There are many surgeries performed for high and complex anal fistulas that still vary in success rates. Fistulotomy continues to be the procedure of choice for simple low fistulas, where the tract is submucosal, intersphincteric or located in the lower third of the external anal sphincter.^[6] Seton technique which can be any type of foreign material pushed in the tract of a fistula is still commonly used in high and complex fistula.^[7]

Recently, many sphincter-saving procedures are practiced aiming to minimize sphincter injury; these include intersphincteric ligation of the tract ligation of intersphincteric fistula tract (LIFT), anal fistula plug, fibrin glue, laser fistula closure, adipose-derived stem cell, and finally video-assisted anal fistula treatment (VAAFT) procedure with different success rates.

VAAFTT procedure was done first by Professor P. Meinero in 2006, using a fistuloscope which allows identification of the fistula tract to cauterize it and identification of the internal opening to be closed. The VAAFT technique would not be complicated by incontinence, and the 30% recurrence is acceptable of such minimally invasive procedure.^[8]

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The purpose of study was to describe the VAAFT technique in the treatment of anal fistula and to show our experience and our encouraging results of this procedure.

MATERIALS AND METHODS

A study of 200 patients (160 men and 40 women; median age 42 years; range 16–85 years) diagnosed with fistula-in-ano in Babylon Private Hospital was conducted during the period of March 2016–2019. Forty patients had undergone classical surgery for fistula-in-ano. Investigations to determine the level and anatomical extension of the fistula were done, which include ultrasound of perianal region for most of the patients, whereas sinography or magnetic resonance imaging was done for some of them. Exclusion from this study was done for simple low type fistuli.

VAAFT was done using Karl Storz company kit [Figure 1] which includes Meinero fistuloscope, an obturator, an endobrush, and a unipolar electrode. Surgery was done in two steps: the diagnostic phase and the operative one. The purpose of the diagnostic phase was to visualize the fistula tract, identification of the internal opening, and marking its opening by stitches without closing it at that time. Identification of the internal opening by simple probing [Figure 2], palpation to feel hardening, or by the looking to the light of fistuloscope in submucosa of the rectum [Figure 3]. Injections of hydrogen peroxide in the tract are also very effective in localization of the internal opening [Figure 4]. The operative phase was done by fulguration of the tract using 1% mannitol solution, curette and brush of the fistula, and finally closing the internal opening with no. 1 Vicryl suture. Prophylactic antibiotic was used by giving single preoperative dose of second-generation cephalosporin and the same dose postoperatively. Postoperative pain killer was administered or 5–7 days.

RESULTS

Two hundred patients proven to have had anal fistula were included in the study; 160 (80%) were male and 40 (20%) female patients, with male-to-female ratio of 4:1. The mean age of patients was 42 years (range 16–85 years). Forty patients (20%) had undergone previous fistula surgery [Table 1]. No major complications occurs apart from soiling in 10 patients (5%), transient flatus incontinence in 5 patients (2.50), urine retention in one patient, and recurrence during 1-year follow-up of 40 patients (20%). Primary healing was noticed in 140 patients (70%) at 12 weeks, 148 patients (74%) at 3 months, and 160 patients (80%) at 1-year follow-up.

DISCUSSION

In this study, the prevalence of male gender was 4 fold compared to female, higher than what was reported in many studies, while the mean age of 42 years and the previous surgery of anal fistula of 20% are consistent with a data from several literatures.^[9]

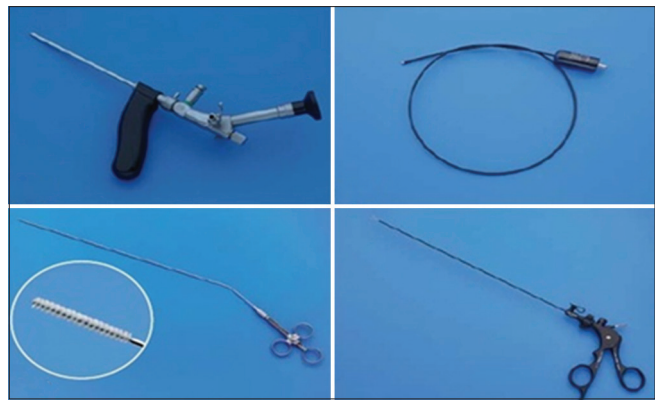


Figure 1: Meinero Fistuloscope Kit



Figure 2: Probing to identify the internal opening



Figure 3: Fistuloscope light to identify the internal opening

Choosing a surgical technique still remains to be a surgical problem. It must maintain eradication of the tract and sepsis with preservation of sphincters. Fistulectomy as a conventional procedure is still used with very high 95% cure rate and in some studies up to 100%. The avoidance of fistulectomy by many surgeons and patients is due to the risk of incontinence.^[10,11] These complications of traditional procedures of fistula-in-ano



Figure 4: H₂O₂ in identification of the internal opening

Table 1: Summary of the 200 cases

Variable Fistula type	Our patients (%)
Low type	90 (45)
High type one tract	40 (20)
High complex multiple tracts	70 (35)

may reach 30% incontinence for flatus, 2% for soft stool, and 4% for hard stool.^[12] That is why new techniques applied sharing the principle of sphincter saving, closing the internal opening, and destruction of the tract were emerged.^[8]

To compare the results of our procedure, the VAAFT with other minimally invasive techniques, as fibrin plug which is a natural biomaterial derived from porcine small intestine submucosa,^[13] is a simple technique with 62% overall success rate after 12 months.^[14] The limitations to do fibrin glue procedure is the cost, persistent abscess, plug material allergy, and when we cannot identify the external and internal ends of the fistula tract.^[13] Such limitations are not found in VAAFT, and VAAFT has higher success rate which is around 80% in our study and other literature.^[15]

The other sphincter-saving method is the use of fibrin glue to seal the tract with variations in success rate from 25% (Zmora *et al.*,^[16] 80% Lindsey *et al.*,^[17]) and in another study, the healing rate reach up to 100% but only in the low type with single tract fistula while only a 25% in high and complex fistula. In general, fibrin glue is recommended in low type fistula with a single tract and with no previous fistula surgery.^[18] Such limitations do not involved VAAFT procedures.

LIFT firstly done by Rojasasakul who did it by closing the tract near the internal opening with healing of 17 out of 18 patients within 1 month.^[19] Later on, the success rate was reported from 57% to 99.4%. The high success rate of lift also associated with some technical difficulties in exploring the intersphincteric plan as in horse shoe and complex fistula direct sphincter damage or injury to blood supply to internal sphincter may occur.^[20,21]

Although LIFT is sharing the VAAFT closing the tract near the internal opening, sphincter injury and perianal skin wound are not found in VAAFT.

Recently, the fistula laser closure (FiLaC) procedure was reported with overall success rate of (64.1%). It is done by closing the internal opening with obliteration of the tract by laser. To compare this procedure with VAAFT, FiLaC needs identification of the two openings of the tract, with preliminary stent, in addition to that it is the blind procedure and may miss the side branch of the fistula tract.^[22]

In VAAFT procedure, the internal opening is adequately closed with complete obliteration of the tract and its side branches under vision. The internal opening is closed using direct suturing, stapler, or mucosal flap. The success rate is high up to (82.6) with low postoperative complications.^[15]

In our study, the overall healing rate was (80%) after 12-month follow-up. The high incidence of high and complex and branched type of 20% and 25%, respectively, whereas the low type was 45% only because we exclude the simple and superficial low type from the study, and nearly all the cases referred to us was complicated and of high type. There are no major postoperative complications, and all of them were accepted and comparable with other studies.

CONCLUSION

VAAFT is a safe, sphincter-saving, small surgical wound painless procedure and can be done as a day case with promising preliminary results, and we can repeat the treatment till cure is achieved.

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Conflicts of interest

There are no conflicts of interest.

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