VAAFT: A NEW MINIMALLY INVASIVE METHOD IN THE DIAGNOSTICS AND TREATMENT OF ANAL FISTULAS – INITIAL RESULTS

PIOTR WAŁĘGA, MICHAŁ ROMANISZYN, WOJcieCH NOWAK
3rd Department of General Surgery, Jagiellonian University Collegium Medicum in Cracow
Kierownik: prof. dr hab. W. Nowak

The aim of the study was to present our own experience in the treatment of anal fistulas by means of VAAFT (Video-Assisted Anal Fistula Treatment).

Material and methods. Twenty patients were qualified for the VAAFT procedure. All were subjected to diagnostics. Two patients after the diagnostic stage underwent classical fistula surgery. The remaining 18 patients were subjected to the full procedure (diagnostic fistuloscopy, supply of the internal ostium, and coagulation of the fistula canal). The mean observation period was 10 months.

Results. In most cases the trans-sphincter fistula was observed during the diagnostic phase, including three with additional fluid compartments. There was one intersphincteric fistula. Considering the 18 patients subjected to the full VAAFT procedure the internal ostium was supplied by means of an advancement flap in 3 cases, while in 11 by means of a mattress suture, including one with additional tissue glue. In 4 cases the internal ostium was tightly covered by mucosa. Surgical complications were not observed during the procedure. During further observation a permanent fistula was observed in 4 (22%) patients, and in two (17%), recurrence of anal fistula. In the remaining 12 patients one observed healing without fistula recurrence. Complications were not observed, including stool and gas control deterioration (based on the FISI scoring).

Conclusions. The VAAFT method does not affect sphincter efficiency, 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 intraoperative identification of the internal ostium and fistula canal under visual control. Initial optimistic results require further investigations on a larger group of patients.

Key words: anal fistula, surgical treatment, minimally invasive procedure, VAAFT

Anal fistulas remain a difficult issue. Due to possible permanent functional consequences the management of anal fistulas must be carefully thought out and planned, and the selection of the procedure should be determined on the basis of the type of fistula. It is not easy because the intraoperative anal fistula image only correlates in 61% of fistulography results, and the estimated sensitivity of the method ranges between 24 and 50% (1).

In case of patients subjected to emergency surgery, due to abscess presence in only 1/3 we are able to recognize the fistula canal and internal ostium. Instrumentation attempts usually end up with the development of a “blind” opening. On the other hand, magnetic resonance imaging is very sensitive (2), but expensive, therefore, is only justified in selected, difficult clinical situations.

MATERIAL AND METHODS

During the period between 2011 and 2012, 20 patients were qualified for the VAAFT procedure. Average patient age was 47 years. The study group comprised 5 female and 13 male patients. All patients were subjected to the initial diagnostic stage. Due to multiple fis-
tula branching and presence of numerous fluid compartments two patients were qualified for classical surgery of the fistulas. The remaining 18 patients underwent VAAFT (Video-Assisted Anal Fistula Treatment).

Description of the procedure

Patients were operated in the gynecological position. General anesthesia was performed in 9 and spinal in 11 patients. The diagnostic stage initiated the procedure in all cases: after suture implantation the fistuloscope, manufactured by Storz (fig. 1), was introduced through the external opening under visual control, with continuous physiological saline flow under pressure. Meinero recommended the use of mannitol (3) through the canal, which rinsed the fistuloscope (fig. 2), enabling good visualization of the anal fistula lumen. During this stage the course of the fistula canal and possible branchings were identified (fig. 3). The fistuloscope was introduced to the internal ostium, which was then closed from the anus under fistuloscope control. Depending on the location and extent, the internal ostium was closed by means of an advancement flap or mattress suture. During the therapeutic stage of the procedure the fistula wall was subjected to coagulation by means of a monopolar electrode introduced through the fistuloscope. The necrotic tissues were removed by means of a brush, also included in the fistuloscope. In case of one patient additional tissue fibrin glue was required. In the final stage of the procedure the external opening was excised leaving an open wound for drainage. Patients without dietary restrictions were discharged from the hospital one day after the procedure for ambulatory control. During the above-mentioned, apart from the proctological examination patients filled out a questionnaire concerning stool incontinence, based on the FISI scale. The mean observation period was 10 months.

RESULTS

The mean duration of the procedure was 67 minutes, ranging between 0:45 and 2:15. In most cases, during the diagnostic phase one observed the intersphincter course of the fistula canal (19), including three cases with additional branching and fluid compartments requiring classical surgery. One patient was diagnosed with an intra-sphincter fistula with the internal ostium in the fundus of the anal fistula.
Of the 18 patients who underwent the full VAAFT procedure the internal ostium was supplied by means of an advancement flap in three cases, by means of mattress sutures in 11, including one requiring tissue glue. In the remaining four cases the internal ostium was covered by healthy mucosa, thus, these patients were subjected to fistula wall electrocoagulation.

No surgical complications were observed in any of the cases. One patient who underwent spinal anesthesia required longer hospitalization, due to post-puncture syndrome.

During further follow-up a persistent fistula (non-healing) was observed in 4 (22%) patients, in another two (17%) anal fistula recurrence was observed, after 4 and 6 months, respectively. In the remaining 12 patients fistula healing without recurrence was observed after an average 10-month observation period. No complications occurred during the ambulatory observation period. Stool and gas control deterioration was also not observed (based on the FISI scale).

**DISCUSSION**

The choice of the surgical techniques has changed over the last several years, which is illustrated by the analysis of results obtained from the Chicago group (Blumetti et al.) (4). The above-mentioned presented anal fistula treatment results considering a group of 2267 patients operated during the period between 1975 and 2009, thus, a long observation period and representative group. The seventies and nineties of the past century were associated with fistulotomy and partial fistulotomy, that is the incision of the sphincters (“cutting procedures”). In the nineties of the past century one observed an increased number of “non-cutting” procedures. Thus, in 2005 the ratio was 50%:50%. Trans-sphincter fistulas constituted 26.7%, while non-classified fistulas-60.3% in the above-mentioned group. However, the index of procedures per one patient increased from 1/1 (1970-79) to 1/1.5 (2005-2009). Thus, the elimination of the risk of stool incontinence. This is especially visible in studies published after 2000, where the preferred trend of minimally invasive techniques illustrates the principle: “something for something”. On one hand, minimally invasive surgery reduces the risk of postoperative stool incontinence, and on the other hand, the percentage of recovery is reduced, as compared to radical procedures.

Minimally invasive procedures include fistula canal closure by means of surgisis, the use of tissue glue, or intersphincteric fistula canal ligation (LIFT). None of these methods enable to recognize the fistula tract, branching and blind canals. The VAAFT (Video-Assisted Anal Fistula Treatment) method described by Meinero allows the intraoperative identification of the fistula canal under visual control, as well as the localization of the internal ostium (3). It is therefore, at this stage a diagnostic method. It eliminates the need to perform fistulography or other visualization examinations before the procedure. The second stage of the procedure consists in the closure of the internal ostium under visual control, as well as cleaning and obliteration of the fistula canal-therapeutic management. We still do not know, how to close best the internal opening during the VAAFT procedure. Meinero proposed the closure of the internal ostium by means of Conture’s stapler, being economically unjustified, and the effects-uncertain. The above-mentioned author uses the technique of simple suturing or advancement flap grafting.

In our material most patients were subjected to ostium closure by means of a mattress suture (11 patients): 4 of these patients presented with a persistent fistula, and in one, recurrence was observed. In case of the three patients subjected to flap advancement closure recurrence was observed in one. Naturally, this is an insufficient number of patients, in order to establish ostium closure recommendations. During the 10-month observation period recovery was noted in more than 60% of patients, which in comparison to results published by Meinero (more than 87% recovery) (3) should not be considered as successful. However, taking into account the learning curve the result is not that bad during the initial stage of method implementation. Moreover, in none of the patients did we observe the effect of the procedure on defecation control functions. Thus, in comparison to classical fistulectomy or fistulotomy procedures, VAAFT does not pose the risk of sphincter damage, which was confirmed by Meinero and our study results.
The question remains, whether the use of tissue or fibrin glues, as a complement to VAAFT, reduces the risk of persistent and recurrent fistulas. Only large randomized studies may answer the question.

Fistula closure using different plugs (Surgisis) is also a minimally invasive procedure without the risk of sphincter damage (5). However, primary closure of the fistula is observed in 50% of patients with the relatively high material costs, and without National Health Fund financing.

The use of another, sphincter-saving method – LIFT (6, 7), which consists in the intersphincteric closure of the fistula canal near the internal ostium gives promising results amounting to 90% of recovery. However, the method is technically difficult or impossible to perform in case of high anal or intersphincteric fistulas.

Wilhelm et al. observed an 80% recovery rate using the laser technique (FILAC) in combination with the advancement flap. However, this method does not allow to control the internal opening and the fistula tract, which resulted in stool incontinence in one (1/17) of the patients (8).

Particularly interesting is the use of VAAFT in Crohn’s disease. Schwandner et al. applied VAAFT noting an additional branching in 7/11 operated patients, and complete fistula closure in 9/11 patients during the nine month observation period (9).

CONCLUSIONS

The VAAFT method does not affect sphincter efficiency, 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 intraoperative identification of the internal ostium and fistula canal under visual control. Naturally, as every new method it requires experience (learning curve). Initial optimistic results, both ours and Meinero’s require further investigations on a larger group of patients (controlled investigations).

REFERENCES


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Adress correspondence: 31-202 Kraków, ul. Prądnicka 35-37
e-mail: pwalega@mp.pl