

ELASTIC SETON PROCEDURE FOR SURGICAL TREATMENT OF ANORECTAL FISTULAS

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ABSTRACT

The anorectal fistula is a disease requiring careful assessment of the local signs and precise localization of the fistula channel. The Seton procedure for treatment of the fistula-in-ano we apply only for the management of trans- or extrasphincteric anorectal fistula. 152 patients with high trans- or extrasphincteric fistula-in-ano were operated. Men were 123/80.92%, women-29/19.08%. In 70 /46.05%/ fistula were extrasphincteric, while in 82/53.95%/ they were transsphincteric. Basic step is to identify the internal opening of the fistula channel following Goodsall's rule. The Seton is trespassed through the internal opening and we tight it moderately. Every next tightening is performed at 3 days intervals. Recurrences were registered in the first 6 months in 8 patients/5.26%/ . We conclude that that seton procedure for treatment of trans- and extrasphincteric fistula is an easy to learn and practice radical one stage surgical method with a cure rate of nearly 95%.Elastic Seton ligation technique is a modification of the known from ancient times conventional ligation procedure. The following procedure is an effective method for difficult and high fistula-in-ano.

Key words: Anorectal Fistula (ARF), Anorectal Abscess (ARA)

INTRODUCTION

The anorectal fistulae (ARF) are chronic consequence after spontaneous or non radical operative abscess drainage in the perianal region/1/. Even wide drainage of the anorectal abscess (ARA) after habitual perforation, its internal opening remains in the anal channel, incriminating persistent inflammatory process from the pathogen flora in the rectum. In cases of microincisions performed by less experienced surgeons, residual abscess leads to fistula formation/1,2/. The inflammatory process in ARF starts from the internal opening of the crypts of Morgan, following the fistula channel through the pararectal tissues, terminating with an external opening in the perianal region/1,3,4/.

While surgical treatment of intrasphincteric and low transsphincteric fistulae is clearly determined and has good postoperative results, the management of high transsphincteric and extrasphincteric ARF is not rarely problematic with unsatisfactory results due to continuous treatment, often recurrence and risk of anal incontinence/5/. Though there are a great variety of different operative methods for the high (complex) fistula, nowadays the ligation method with elastic seton is basic and most common/2,6,7/.

AIM

The aim of this retrospective study is to analyze the frequency of trans- and extrasphincteric ARF, their distribu-

tion by sex, age, as well as the application of the ligation method as one stage radical operative treatment and finally assess the radical treatment in terms of short and long term results and recurrence.

MATERIALS AND METHODS

For a ten years period /2000 – 2010/, 152 patients with high trans- and extrasphincteric ARF have been operated in our clinic. As ARF have cryptoglandular origin, specific fistula in Crohn's disease, tuberculosis, actinomycosis is excluded from the study. Men were 123 (80.92%), women – 29 (19.08%), with a ratio 4.2: 1. Age varied from 21 to 74 years. Extrasphincteric fistula was 70 (46.05%), while transsphincteric were 82 (53.95%). Recurrent ARF have been observed in 18 (11.84%) patients. All patients were operated in gynecological position, under intravenous or epidural anesthesia. After examination of the fistula channel with a probe we define the localization of the fistula channel according to sphincter complex. We start with ellipse skin incision including the fistula opening and advancing circumferentially excise the entire fistula channel to the sphincter. After curettage of the fistula channel at the sphincter, we apply the elastic Seton ligation passing through, or above the sphincters. The seton is trespassed through the internal opening and we tight it moderately. This method of gradual tightening and sectioning of the sphincter muscles due to ischemia and cicatrisation prevents incontinence and keeps sphincter functionality.

Mean hospital stay is 12.71 days, with a mean period of wound healing of 41.53 days. Patients were followed up postoperatively on 1 month, 3 months, 6 months and every 12 months thereafter. Recurrences were registered in the first 6 months in 8 patients (5.26%) - 6 in the first 3 months and 2 - up to the 6 month. Of them 7 patients were operated successfully in our clinic, while the 8th patient was cured after 3 consecutive operations. All patients were carefully examined by inspection, palpation of the perianal region, digital rectal examination, anoscopy, probing, rectoscopy and sometimes fistulography and endoanal sonography.

RESULTS

In 140 patients (92.11%) ARF are result of previous anorectal abscess, while the other 12 (7.89%) lacks clear information about the origin. In 43 patients (28.29%) there has been spontaneously opened ARA, after which they have been operated, while 17 others (11, 18%) also opened spontaneously, but were not treated until fistula secretion appeared.

In the postoperative period we performed staged and controlled tightening of the seton ligature. Postoperative care is of great importance for radical cure of the ARF patients. The daily baths and antiseptic bandages with Jodine liniment are important factor for good treatment of the wound surface, where healing goes from depth to the surface. Another main step is the periodic tightening of the elastic ligation every 4 days. It usually takes 2 or 3 times of tightening until ligature falls down (mean 3.28 days). The total mean period for cutting the elastic ligation is 10.23 days, while mean time for wound healing is 41.57 days.

DISCUSSION

The cornerstone in the radical operative treatment of ARF with elastic Seton is the exact and precise identification of the topography and anatomy of the fistula channel from its beginning to its end/8/.

The implementation of the ligation method depends mainly on the type, localization, length and complexity of the fistula, presence of additional abscess cavities, infiltrates, and secondary channels, stage of development, number and kind of previous procedures performed/8,9/.

Preoperatively we always clarify the localization, number and direction of the fistula channel, and most importantly the place of the internal opening according to the rule of Goodsall. The chronic inflammation around the fistula channel leads to fibrosis, which is always manifested at palpation in the pararectal tissues. Very appropriate for the exact localization is the bidigital palpation - right index finger probing the anal channel and left index finger palpating the external perianal fibrous thickening, starting from the outer fistula opening. In the region of the internal opening we palpate a hard nodule corresponding to the fibrously degen-

erated anal crypt, from which the fibrous fistula channel starts. Preoperatively we always assess the anal sphincter function, especially in recurrent and long lasting ARF. The probing through the external opening defines the direction of the fistula channel, performing it carefully, non traumatic under digital control in the anal channel. The best probe is this of plastic metal, with a ballpoint tip allowing twisting along the channel. We follow the non traumatizing and none forced passage of the probe throughout the whole channel till its internal opening in the crypts of Morgan. In difficult cases we use hydrogen peroxide and methylene blue for the identification of the internal opening. We excise circumferentially and totally the fistula channel up along the instilled probe to the external anal sphincter and then perform curettage below the sphincter towards the internal opening and place the elastic seton. Sometimes along the fistula channel we can observe tissue thickening, abscess cavities and bruises as a consequence of previous exacerbations and incisions. In cases of delayed treatment formation of new fistula and openings follows, leading to horseshoe fistulae. The applied seton ligation gradually cuts the sphincter muscles, thus the internal opening migrating in distal direction, until its liquidation. Beyond the cutting ligation the wound is filled with granulation tissue, with following cicatrix formation, fixing the cut sphincter fibers. The elimination of the internal opening and the healing of the perianal wound go consecutively and synchronously together with the fell down of the ligature. This granulating wound allows good drainage and normal healing.

The surgical tactics in the ligation method of treatment of ARF is determined by three basic principles:

- maximum excision of the fistula channel to the sphincter
- exact revision and drainage of the present abscess cavities.
- liquidation of the internal fistula opening
- The sound fulfillment of all these steps is of great importance, especially the precise identification of the internal opening.
- Great disadvantage in the operative treatment of ARF is that even if a small fistula segment is overlooked and left, recurrence follows.

We did not perform any antibiotic therapy perioperatively. The usual preoperative preparation included laxatives and rarely enema. We used intravenous or epidural anesthesia. Most common failure in anorectal fistula surgery comes along with recurrence and anal sphincter dysfunction. Postoperative anal continence depends on the type of ARF, number of postoperative tightening of the ligation, presence of additional fistula channels and wideness of the wound surface/10/. The main reasons for recurrence are lack complete verification of the whole fistula channel, false identification of the internal opening, overlooked or mistreated side fistula channels, not radical operative treatment and postoperative negligence/10,11/.

CONCLUSION

The main reason for the occurrence of ARF is the late referral of patients and not radical treatment. Complete cure of ARF depends mainly on the precise identification and eradication of the internal fistula opening, which is an inflammatory process entry. Treatment of the high ARF requires professional experience and is best performed in specialized coloproctological centers. The seton ligation method has the advantages of easy to perform in one stage with less expenses, low recurrence and possibility for application in complex fistulae. Disadvantages of the method are long-term treatment and risk of anal incontinence.

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