

Routine Use of Setons for Treatment of Anal Fistula

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Abstract

Anal fistula is usually treated surgically by either fistulotomy or fistulectomy. The procedure requires local or general anesthesia and the opened wound needs regular dressings. This is associated with appreciable discomfort and morbidity to the patients. We herein described the routine use of setons to treat anal fistulae without any surgery. Forty seven consecutive patients with anal fistulae were treated with setons alone. The median age was 41 years (range: 18-70). Fifteen patients had previous surgery for the fistula or perianal abscess. At least two setons were inserted through each fistula. One was tied tightly as a cutting seton and another was loosely tied for drainage purpose.

Thirty three patients (70%) had the placement of setons in the clinic without any anesthesia. Fourteen patients, one with complex anal fistula and 13 with perianal abscesses, had the setons inserted in the operative room of which 6 patients required general anesthesia and another two received intravenous sedation.

The median follow-up time was 15 weeks (range: 2-67 weeks). Eleven patients had incomplete or were lost to follow-up. The fistula completely healed by this method in 32 patients of 36 patients (88%). The median healing time was 9 weeks (range: 4-62 weeks). One patient developed recurrent fistula and was successfully treated with another seton placement. Six patients were lost to follow-up. All patients who completed follow-up were satisfied with this treatment and no patient developed any fecal incontinence.

Fistula-in-ano is a common perianal condition that is associated with appreciable morbidity and inconvenience to the patient. There are many different classifications for this condition in the literature which illustrate the fact that none of them is applicable to all cases. The most well known classification is Park's classification which is based on the relationship between

the fistula track and the anal sphincters.¹ However, the complexity and the relevance of this classification raises the doubts of its use in routine management of anal fistula.

The principles of anal fistula surgery are to eliminate the fistula, prevent recurrence and preserve sphincter function. Success is usually determined by identification of the primary opening and dividing the least amount of muscle as possible. Most of the anal fistulae have been conventionally treated by either fistulotomy or fistulectomy. It usually works well.

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However, the procedure requires loco-regional or general anesthesia. Postoperative wounds are usually left open and take some time for complete healing to occur. Furthermore, it sometimes even carries a noticeable risk of recurrence and incontinence especially high-risk patients such as those with complex fistulae, the elderly patients, and women with anterior fistulae.

Seton has been used to manage anal fistula for thousands of year. In the literature, setons were commonly described only for high or complex anal fistula in order to avoid incidence of fecal incontinence and recurrence.² Even though anal fistulae are mostly of the simple type, they are usually treated surgically, and patients need to be hospitalized and are usually uncomfortable in postoperative period. In this study we described the initial results of the routine use of two setons placement, one for drainage and another one as a primary cutting seton, for all consecutive patients with various type of anal fistula seen in the outpatient clinic.

MATERIALS AND METHODS

A prospective study of 47 consecutive patients with anal fistula managed by seton method between July 1997 to December 2000 was performed. Patients were managed in the outpatient clinic at the National University Hospital of Singapore. All patients were treated by two-seton placement technique.

Technique

The seton was usually inserted at the clinic without any form of anesthesia. In some cases when there were concurrent perianal abscesses, or difficulties in identifying the fistula tract or when patients were unable to tolerate the examination, the procedures were performed in the operative room with either local or brief general anesthesia. The patient was examined in the left lateral position. Per-rectal examination would establish the diagnosis and the fistula tract is identified. In the initial 8 patients, fistulogram was also done to give the surgeon a feel of complexity of the tract. However fistulography was not performed in other cases as tracking of the fistulae was not improved by fistulography. A non-absorbable suture (e.g. Prolene 00) was inserted through the external opening using a buttonhole probe. The

suture would come out at the internal opening. A Roeders knot was tied and slid to the skin as tightly as the patient could tolerate to effect cutting. The long end of each suture was taped to the patient's medial thigh. Another non-absorbable suture was inserted into the same tract and was tied loosely. This second seton served as a drain for the infection. Multiple setons could be inserted when there were more than one tract. The patient was instructed to adjust the tension of the Roeders knot daily as tolerated.

Repeated examinations were carried out at 2-4 weeks interval. At each visit, the position of seton was assessed and tightened progressively. The data of previous anal operation, history of fecal incontinence before and after seton treatment, wound healing, and recurrence of anal fistula were recorded. The patient would be discharged from the clinic when the seton cut through the perianal skin and the wound had completely healed.

Also a telephone survey was conducted by a research nurse to detect any recurrence and any problem of fecal incontinence regularly every six months to annually. A satisfactory score of treatment was obtained from each patient at the end of the telephone survey.

RESULTS

The series included 47 patients with 41 men (87%) and 6 women (13%). The median age was 41 (range: 18-70). Fifteen patients had previous anal operations: 7 for anal fistula, 6 for perianal abscess and 2 hemorrhoidectomies. The median duration of symptoms was 26 weeks (range: 2-416 weeks). Thirty three patients (70%) had the setons placed in the clinic without any anesthesia. Fourteen patients had the setons inserted in the operating room. Six patients required general anesthesia, of which 4 also required drainage of perianal abscesses. Two patients had the placement of setons under intravenous sedation.

Thirty six patients were continuously followed until complete wound healing. Six patients self-referred to other hospitals and could not be contacted. The last 5 patients are now followed in the clinic (after a period of lost to follow-up) and the results of treatment are satisfactory for all 5 patients. Wound healing data were not complete for these 11 patients. Therefore the data of only 36 patients were analyzed. None of the 36

patients suffered major fecal incontinence after the end of treatment.

The median follow-up duration was 15 weeks (range: 2-67 weeks). The fistula was completely healed by this method in 32 of 36 patients (88%). The median healing time was 9 weeks (range: 4-62 weeks). One patient had a fistulectomy subsequently as he required hemorrhoidectomy for his prolapsed piles. Another patient developed recurrent fistula and was healed after another seton placement. Six patients defaulted follow-up but their fistulae were seen cutting through by the setons at their last clinic visits. All patients who completed follow-up were satisfied with the treatment and no patient developed any fecal incontinence.

DISCUSSION

The age distribution and male predominance (87%) seen in this series are similar to most other series.^{3,4} Our results demonstrated that the use of a seton offers several advantages in the management of patients in various anal fistula types. The procedure can be entirely performed as ambulatory outpatients. Most patients tolerated the procedure well, even with minimal anesthesia.

In addition, they were satisfied with the treatment and only one patient had recurrence during the follow up period. This patient did not regularly attend the follow-up clinic and the recurrence was caused by inadequate wound toilet after seton cutting through.

Anal fistula is believed to originate from infection of anal glands. The main principles of management are drainage of infection, and eradication of fistulous tract with preservation of sphincter function.⁵ The majority of perianal fistulae are low fistulae, which include the submucous, intersphincteric, and most of the transsphincteric types of anal fistula. Conventionally, this type of fistula is treated by either laying open (fistulotomy) or excision of the fistulous tract (fistulectomy). For some trans-sphincteric fistula, an alternative technique called transanal advancement flap has been advocated for many years.⁶ Although this technique also yields excellent functional results even in the presence of Crohn's disease, it demands considerable surgical skills.⁷ However, both procedures are associated with considerable pain and requirement of some form of anesthesia. Also the patient needs to be hospitalized for the operation. Moreover, the open

wound of conventional surgery needs repeated dressing, which brings further discomfort and inconvenience to the patients.

A seton is a thread of foreign material that is placed in the fistula tract. Hippocrates first described this method.⁸ Many different materials have been used as seton, but the more common ones are non-absorbable suture materials, rubber, wire, and medicated thread (kshaarasootra).⁹ Conventionally, seton is used in the management of high or complicated anal fistula. The function of seton is to provide drainage, and induce chronic fibrosis, which allows through opening of the fistula tract with preservation of sphincter mechanism. Two common techniques have been used: the cutting seton, and the two-staged fistulotomy.¹⁰ For the cutting seton method, the seton is tied tightly around the fistulous tract. It will gradually transect the muscle by pressure necrosis and the fibrosis fixes and prevents retraction of the sphincter. In the two-staged fistulotomy, the seton is tied loosely and the fistulotomy is performed as second procedure. The seton serves as drainage and also induces fibrosis.

Only one report in the literature described the use of seton for low anal fistula. Lentner et al. reported the result of long-term indwelling seton in low transsphincteric and intersphincteric anal fistula.¹¹ In their series of 108 patients, a seton of nonabsorbable suture was tied loosely through the fistula tract. The authors reported a very low recurrence rate (3.7%) with minimal risk of incontinence. Only 12 patients in the series required in-patient treatment and the overall mean hospital stay was 0.3 day. However, the treatment was prolonged with a median treatment time of 13 months, and a significant proportion of patients (44%) requires another operation for the residual fistulous tract.

In our series, we used at least two setons for each fistula tract. They serve the two different functions of setons. The loose seton allows drainage of the ongoing infection. Another seton is a cutting seton which is tied tightly outside the fistula. The Roeders' knot enables the patient to adjust the tension daily so the seton can cut the tract in a controlled fashion.¹² The cutting seton probably reduced the length of treatment. Most of our patients had the insertion of seton in the clinic though some required general anesthesia in the operative room especially those with concurrent perianal abscess.

In conclusion, our approach provides an alternative to the conventional operative treatment for anal fistulae. Our routine use of the setons method is safe and effective in various types of anal fistula. This traditional treatment for fistula-in-ano also has the advantage of being considerably inexpensive than inpatient operative methods and may allow the patient to continue to be in employment.

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