Partial fistulotomy and multiple setons in high anal fistulae

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Abstract Setons are employed in high perianal fistulae. Our study aimed to use multiple setons in addition to a partial fistulotomy in high perianal fistulae involving the sphincter complex to combine the effects of cutting and drainage of the fistulous tract. This prospective study included 16 patients over a period of 4 years who presented with high perianal fistulae. The internal opening was identified and tract laid open till the dentate line. Four prolene threads were passed along the remainder of the tract and taken out through the external opening. One was tied tightly while the others were tightened every 7 days. No patients developed major faecal incontinence. Fistula recurred in one patient within a year and one patient had occasional incontinence to flatus. Multiple setons after partial fistulotomy is an effective treatment for high anal fistulae with low incidence of incontinence and recurrence and adequate patient satisfaction.

Keywords Partial fistulotomy · Multiple setons · Cutting setons · Draining setons · High perianal fistula

Introduction

The principles of anal fistula surgery are to eliminate the fistula, prevent recurrence and preserve sphincter function [1]. Simply laying open the fistula tract is adequate for low fistulae. The morbidity increases with the more complex or high type of fistulae. Setons are employed in addition to distal fistulotomy in perianal fistulae with high rectal or anal opening to prevent faecal incontinence. Setons can be used for cutting, draining or chemical cauterization. Aim of our study is to use multiple setons in addition to a partial fistulotomy in high perianal fistulae involving the sphincter complex to combine the effects of cutting and drainage of the fistulous tract. We have then studied the outcome of the patients.

Patients and methods

This is a prospective study in which patients with high anal fistula were chosen between 2002 and 2006. We included 16 patients who were diagnosed clinically or by a fistulogram as having a high anal fistulae. All of them underwent a sigmoidoscopy to exclude any other organic disease like Crohn's, tuberculosis or malignancy.

Each patient underwent preoperative bowel preparation with phosphate enemas and the procedure was performed under general anaesthesia. At first the internal opening was identified by passing a malleable probe or by injecting a small amount of methylene blue and hydrogen peroxide through the external opening. Once we defined the internal opening the tract was laid open over the probe upto dentate line. All the granulation tissues in the laid open tract were scraped and biopsy taken from the tract margin. The infected gland was also removed in the process. Four to five

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prolene no.1 threads were passed along the remainder of the tract which involved the sphincter complex one by one and taken out through the external opening (Fig. 1). One was tied tightly at the end and others were left loosely in a knot. The tied thread cut the tissue while the others drained the tract. The patients were seen after 7–10 days as outpatients and under sedation granulation tissues were cleared and one of the loose threads knotted tightly. The patients were followed over a period of 1–5 years.

Results

Sixteen patients were a part of the study of which 9 were male and 7 were female. Their age ranged from 16–62 years, with a median age of 35 years. Preoperatively 12 patients had fistulogram showing of which patients. One of the patients had occasional incontinence to flatus. Fistula healed satisfactorily in all the patients, the median time being 8.5 weeks. However fistula recurred in one female patient who was operated again for a residual low fistula tract which was laid open. Overall all the patients were satisfied except the patient who had the recurrence.

Discussion

The most notable classification of fistula-in-ano type is by Park and this is based on the relationship between the fistula tract and the anal sphincters. In high fistulae the internal opening is difficult to identify and a fistulotomy of the entire tract damaging the sphincters leads to incontinence, be it to stool or flatus.

A fistulogram was used to define the internal opening as well as the tract. Though MRI or endorectal ultrasound is more helpful for delineation of the tract, due to economic constraints and lack of facility in our hospital we could not do those investigations.

Fig. 1 Placing the setons after a partial fistulotomy

We have attempted to identify the internal opening by injecting both methylene blue and hydrogen peroxide. The advantage of this method is that while methylene blue by staining the adjacent tissue sometimes can obscure the internal opening hydrogen peroxide bubbling through the opening can give us a better view.

Continence is the mark of a civilized man so it is of paramount importance that we should prevent its loss. This is where setons come in. Setons are threads used to cut through sphincter complex. A seton may be of a cutting or a draining type. Cutting setons can act as a prop for the tissues as they cut through preventing the retraction of the muscle fibres which limits impairment of sphincter function [2]. Chronic infection due to debris and pus is one of the reasons that a fistula does not resolve. A draining seton helps drain these obstinate fistulae and therefore expedites its resolution [3] (Fig. 2). Here, by using both cutting and draining setons we have looked to combine their benefits. At the same time a partial fistulotomy which does not cut through both sphincters ensures that continence is maintained [4].

Setons can be of various materials ranging from silk and prolene to ayurvedic coated threads like Ksharasootra. We have chosen prolene because of its inert nature that has a propensity to produce aseptic fibrosis and therefore obliteration of the tract.

There have been previous studies that have combined a partial fistulotomy with setons with a measure of success [5]. Mucosal flap advancement is another effective method but here we have ensured continence in all patients. While fistula had recurred one patient, the fistula had healed initially. Later it was found that she had tuberculosis and is undergoing antitubercular therapy. So inspite of the small number of patients, our study here shows that multiple setons following a partial fistulotomy is an effective treatment for high anal fistulae with low incidence of incontinence and recurrence and adequate patient satisfaction.

Fig. 2 Illustration showing the cutting and draining setons

Conflict of interest The authors do not have any disclosable interest

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