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Seton treatment of perianal fistula with high anal or rectal opening

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Staged fistulotomy with a seton is considered to decrease the high incidence of continence disorders after surgical incision of a fistula. This retrospective study reports the results of the two-stage procedure with special emphasis on faecal continence. Thirty-four patients (aged between 20 and 57 years) were treated between 1981 and 1990 with a two-stage seton procedure for anal fistula (16 extrasphincteric and 18 trans-sphincteric) with a high anal or rectal internal opening. Thirty-one patients had normal preoperative continence. There were two recurrences. All

trans-sphincteric fistulas healed. Twenty-nine patients with preoperative normal faecal control were available for follow-up. Postoperative continence was normal in 12 patients (category A according to Browning and Parks classification²); five patients had no control over flatus (B), 11 were incontinent for liquid stool or flatus (C) and one had continued faecal leakage (D). The two-stage seton technique is not recommended for fistulas with high anal or rectal openings.

The classical method for curing anal fistula is the 'lay-open' technique. Functional results are generally good in fistulas with low or mid-anal openings but in fistulas with high anal or rectal openings it leads to a higher incidence of continence disorders¹. Staged fistulotomy with a seton is considered to decrease the high incidence of continence disorders after surgical incision of a fistula with high anal or rectal opening. This paper, therefore, reviews the use of a seton in a two-stage procedure with special emphasis on outcome and faecal continence.

Patients and methods

Some 397 patients were treated for anal fistulas between 1981 and 1990. Setons were used in 34 patients (8.6 per cent). None had Crohn's disease. Ages ranged from 20 to 57 (mean 38.5) years and 17 were women. Twenty-six patients presented with a recurrence. Thirty-one patients had normal continence. Setons were placed for extrasphincteric (16) and trans-sphincteric (18) fistulas. The internal openings were located in the anterior quadrants in 13 patients and in the posterior quadrants in 21. When present, secondary openings were always located in the same quadrants as the primary.

Operative treatment

Operative treatment involved identification of the complete fistulous tract and its extensions, localization of the internal opening(s) and surgical drainage.

The main fistulous tract was laid open and adequate drainage created in a fistula with a low or mid-anal opening. For cases in which a secondary high anal or rectal opening was identified, the main tract leading to the midanal opening was laid open and a seton was then tied loosely without tension around the remaining deep part of the internal and external sphincters anteriorly, or the internal and external sphincters and puborectal sling posteriorly. For primary high anal or rectal openings, the superficial and middle parts of the external sphincter were divided at the site of the internal opening and a seton was placed as described previously (Fig. 1).

The seton comprising a braided thread of Mersilene number 1 (Ethicon, Hamburg, Germany), which is wrapped twice around the muscle, promotes fibrosis in the tissues surrounding the remaining part of the sphincters thereby preventing retraction of the tract muscle after division.

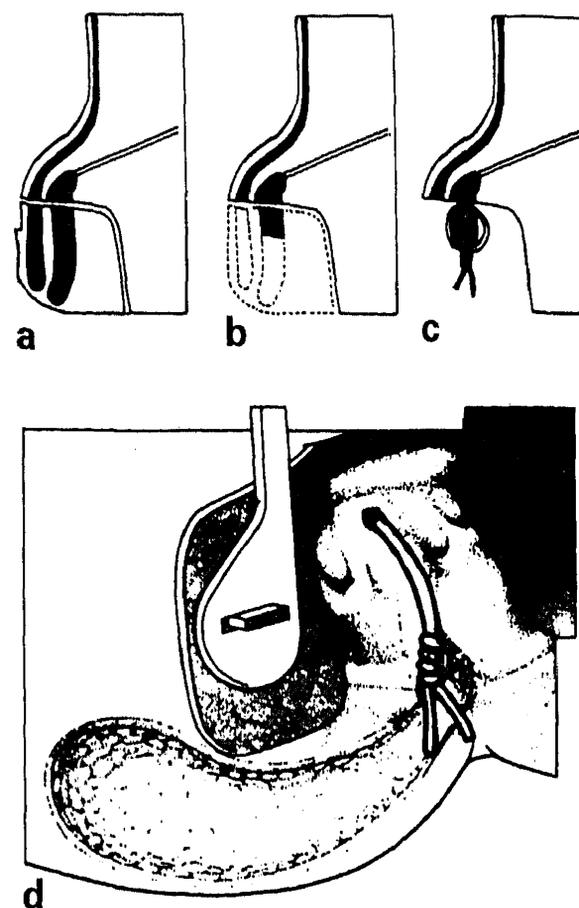


Fig. 1 a Operative treatment of a trans-sphincteric anal fistula with a high anal opening. b The anal mucosa, internal sphincter and lower part of the external sphincter are divided at the site of the internal opening; c and d a seton is then placed. The remaining tract identified by the seton was divided as a secondary procedure after healing of the perineal wound

The remaining tract identified by the seton was divided as a secondary procedure after healing of the perineal wound at 3 months.

Results

There were two recurrences, both in patients with an extrasphincteric fistula. All trans-sphincteric fistulas healed.

Postoperative continence was assessed using the classification according to Browning and Parks² in which category A represents those continent for solid and liquid stools and flatus (i.e. normal continence), B those

Table 1 Comparison of preoperative and postoperative continence in 29 patients with normal preoperative control*

Degree of continence	Trans-sphincteric fistula		Extrasphincteric fistula	
	Preoperative	Postoperative	Preoperative	Postoperative
A (continent for solid and liquid stool and flatus)	16	8	13	4
B (continent for solid and liquid stool but not flatus)	—	2	—	3
C (continent for solid stool but incontinent for liquid stool or flatus)	—	6	—	5
D (complete incontinence, continued faecal leakage)	—	—	—	1

*Continence was classified according to the criteria of Browning and Parks²

Table 2 Relation between incontinence and sex

	Total	Women	Men
No. of patients	29	15	14
No. of continence disorders	17	9	8
Trans-sphincteric fistulas			
No. of patients	16	6	10
No. of continence disorders	8	3	5
Extrasphincteric fistulas			
No. of patients	13	9	4
No. of continence disorders	9	6	3

continent for solid and liquid stools but not flatus, C those continent for solid stool but with no control over liquid stool and flatus and D those with continued faecal leakage.

A questionnaire regarding faecal control was sent to all patients and returned by 31.

Some 29 patients with preoperative normal control were available for follow-up (Table 1). The incidence of continence disorders was equal in both women and men (Table 2).

Discussion

Traditionally, a seton is a heavy non-absorbable suture such as Mersilene³ or silk^{4,5}, but silastic⁶⁻⁸, rubber⁹ and elastic bands⁴ have been used. It is believed that setons promote the development of fibrosis so that retraction of the muscle after division is prevented. Treatment with setons is considered to be safe, with a low incidence of recurrence and major faecal incontinence⁷. The use of setons is not universal, however, and in most series less than 10 per cent of patients have been treated with a seton^{3,4,6,10,11}.

Most or all of the internal sphincter is divided in the first stage of two-stage fistulotomy with a seton. Part of the external sphincter complex is also divided and some favour the distal region^{6,12} and others the proximal^{3,7}. Others do not divide the external sphincter at all⁶. Most divide the remaining part of the external sphincter as a secondary procedure^{5,8,9,13,14} but simple removal of the seton has its advocates too⁶.

Results of staged fistulotomy with a seton are good. Most recurrence rates vary from 0 per cent to 3 per cent^{3,4,7,11} which are comparable to those of the present

series. Held *et al.*⁹ reported a recurrence rate of 18 per cent. Functional outcome, however, is moderate after a two-stage or multiple stage procedure. Faecal incontinence occurs in 0–8 per cent⁷ and minor continence disorders in approximately 60 per cent^{4,6,7}. In one series³ the incidence of incontinence was 2 per cent. In the study discussed here only 41 per cent had normal postoperative control.

Even when the external sphincter was not divided and the seton removed after several weeks, continence disorders occurred in 62 per cent of patients which indicates that incontinence is not caused exclusively by impaired external sphincter function⁶. It is more likely that soiling and impaired control are the result of other abnormalities such as endoanal fibrotic scar and impaired internal sphincter function, which are consequences of the total internal sphincterotomy performed during the staged procedure. Whenever possible part of the internal sphincter should be preserved as it is well known that low resting pressures lead to soiling and impaired control^{15,16}.

The incidence of continence disorders after fistulotomy in the present patients with low, mid- and high anal openings was 13, 24 and 34 per cent respectively¹. These disorders were therefore more common after two-stage fistulotomy than after the primary procedure for fistulas with high anal openings (59 per cent *versus* 34 per cent).

These results demonstrate that two-stage fistulotomy with the seton is not superior to one-stage procedure for fistulas with high anal or rectal openings.

References

- 1 van Tets WF, Kuijpers HC. Continence disorders after anal fistulotomy. *Dis Colon Rectum* 1994; 37: 1194–7.
- 2 Browning GGP, Parks AG. Postanal repair for neuropathic faecal incontinence: correlation of clinical result and anal canal pressures. *Br J Surg* 1983; 70: 101–4.
- 3 Ramanujam PS, Prasad ML, Abcarian H. The role of seton in fistulotomy of the anus. *Surg Gynecol Obstet* 1983; 157: 419–22.
- 4 Williams JG, MacLeod CA, Rothenberger DA, Goldberg SM. Seton treatment of high anal fistulae. *Br J Surg* 1991; 78: 1159–61.
- 5 Fasth SB, Nordgren S, Hulten L. Clinical course and management of suprasphincteric and extrasphincteric fistula-in-ano. *Acta Chirurgica Scandinavica* 1990; 156: 397–402.
- 6 Kennedy HL, Zegarra JP. Fistulotomy without external sphincter division for high anal fistulae. *Br J Surg* 1990; 77: 898–901.
- 7 Pearl RK, Andrews JR, Orsay CP *et al.* Role of the seton in

- the management of anorectal fistulas. *Dis Colon Rectum* 1993; 36: 573-9.
- 8 Williams JG, Rothenberger DA, Nemer FD, Goldberg SM. Fistula *in ano* in Crohn's disease. Results of aggressive surgical treatment. *Dis Colon Rectum* 1991; 34: 378-84.
 - 9 Held D, Khubchandani I, Sheets J, Stasik J, Rosen L, Riether R. Management of anorectal horseshoe abscess and fistula. *Dis Colon Rectum* 1986; 29: 793-7.
 - 10 Christensen A, Nilas L, Christiansen J. Treatment of transsphincteric anal fistulas by the seton technique. *Dis Colon Rectum* 1986; 29: 454-5.
 - 11 Ramanujam PS, Prasad ML, Abcarian H, Tan AB. Perianal abscesses and fistulas. A study of 1023 patients. *Dis Colon Rectum* 1984; 27: 593-7.
 - 12 Kuypers HC. Use of the seton in the treatment of extrasphincteric anal fistula. *Dis Colon Rectum* 1984; 27: 109-10.
 - 13 Parks AG, Stitz RW. The treatment of high fistula *in ano*. *Dis Colon Rectum* 1976; 19: 487-99.
 - 14 Cirocco WC, Rusin LC. Simplified seton management for complex anal fistulas: a novel use for the rubber band ligator. *Dis Colon Rectum* 1991; 34: 1135-7.
 - 15 Kuijpers HC, Scheuer M. Disorders of impaired fecal control. A clinical and manometric study. *Dis Colon Rectum* 1990; 33: 207-11.
 - 16 Kuijpers HC. In: Kuijpers HC, ed. *Colorectal Physiology: Fecal Incontinence*. Boca Raton: CRC Press, 1994: 65-7.

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Case report

Urethral catheterization causing incarceration of a previously reducible inguinal hernia

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Therapeutic intervention may alter the signs and symptoms in a patient to such an extent that diagnostic confusion can arise. A case of urethral catheterization mimicking an irreducible inguinal hernia is described here.

Case report

An 81-year-old man was admitted as an emergency with a 5-day history of right upper quadrant pain and vomiting. On examination the patient had signs of generalized peritonitis and a reducible right inguinal hernia was noted. He was resuscitated with intravenous fluids, and a nasogastric tube and urethral catheter were inserted.

Subsequent examination revealed an exquisitely tender irreducible right inguinal hernia. The patient underwent laparotomy at which a direct inguinal hernia containing bladder was found. Inflation of the Foley catheter balloon within the hernia had caused it to become irreducible. The hernia was easily reduced with the balloon deflated.

Peritonitis was caused by a perforated gallbladder for which the patient underwent cholecystectomy and made an uneventful recovery.

Discussion

Hernia of the bladder into the inguinal canal is not an uncommon condition, being found in up to 10 per cent of patients over the age of 50 years^{1,2}. To the authors' knowledge, inadvertent catheterization of the hernial sac by a Foley catheter leading to an apparent incarceration of the hernia has not been described previously. Incarceration of a hernia sac by a colonoscope, however, has been described³.

Strangulation or incarceration of a hernia together with acute peritonitis is a recognized entity^{4,5}. This combination can lead to diagnostic difficulties in trying to establish whether the cause of peritonitis lies within the hernia sac, or is the result of another, separate aetiology. The condition of the present patient was such that he obviously required a laparotomy after resuscitation, and the potential confusion caused by the change in symptoms and physical signs after urethral catheterization did not alter his management.

Iatrogenic causes should be considered in the differential diagnosis for any sudden change in a patient's condition after therapeutic intervention.

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References

- 1 Soloway HM, Portney F, Kaplan A. Hernia of the bladder. *J Urol* 1960; 84: 539-43.
- 2 Pasquale MD, Shabahang M, Evans SRT. Obstructive uropathy secondary to massive inguinoscrotal bladder herniation. *J Urol* 1993; 150: 1906-8.
- 3 Koltun WA, Coller JA. Incarceration of colonoscope in an inguinal hernia. "Pulley" technique of removal. *Dis Colon Rectum* 1991; 34: 191-3.
- 4 Ekwueme O. Strangulated external hernia associated with generalized peritonitis. *Br J Surg* 1973; 60: 929-33.
- 5 Shapira O, Simon D, Rothstein H, Mavor E, Pfeiffermann R. Acute symptomatic hernia. *Isr J Med Sci* 1992; 28: 285-8.

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