Abstract

Objectives: To put the light on surgical treatment of high Fistula-in-ano by using the seton and a trial to know it’s importance.

Material and methods: A retrospective study of 72 patients, their age range 19-57 year the mean age 34.2, all of them were male except one female, with a high fistula-in-ano collected within a period of 14 years from Jan.1995 to Dec. 2008, 57 patients diagnosed during operation by simple probing while 15 of them were diagnosed by contrast x-ray (fistulogram). The lower part of the fistula was excised while a thread put around the high part.

Result: The time was needed range from 2-6 weeks for seton to cut completely and drops away this true for all except one who cut the seton and disappeared. All the rest got a sound healing and no reported recurrence.

Conclusion: It is appeared from this study that seton is an excellent surgical way for the treatment of high fistula-in-ano.

Introduction

Anorectal fistula (Fistula-in-Ano) is an abnormal communication between the anus and perianal skin (Fig.1), (Fig.3), [1,2,3]. Anatomically the anal canal is essentially a cylinder surrounded by two muscular sphincters, the internal and external anal sphincter which are composed of smooth and striated muscle, respectively (Fig.2). The external sphincter has posterior attachment to the anococcygeal ligament and anterior attachment to the perineal
body and urogenital diaphragm [4]. The internal sphincter is the distal termination of the circular muscle of the gut tube[24]. The rectal longitudinal smooth muscle interdigitates between the internal and external sphincters and is thought to have no obvious sphincteric effect, rather its role is probably to bind the anus together[5]. The plane of dissection between internal and external sphincters is the intersphincteric space & it exist as a sheet of fat connecting loose areolar tissue. The fat filled ischioanal fossa lies lateral to the sphincter complex and is traversed by a network of fibro elastic connective tissue fibers[6](Fig.9).

The dentate line lies approximately 2cm proximal to the anal verge & is a crucial landmark in fistula-in-ano because the anal glands empty into the crypts that lie proximal to the valves. Anal canal glands situated at the dentate line(Fig.2) afford a path for infecting organisms to reach the intermuscular spaces[8].

Fistulas can occur spontaneously or secondary to a perianal (or perirectal) abscess(Fig.9). Other fistulæ develop secondary to trauma, Crohn's disease, anal fissures, carcinoma, radiation therapy, actinomycoses, tuberculosis, and chlamydial infections progresses into the muscular wall of the anal sphincters to cause an anorectal abscess. Following surgical or spontaneous drainage in the perianal skin, occasionally a granulation tissue-lined tract is left behind, causing recurrent symptoms. [9,10]. The anal glands were first linked to the genesis of fistula-in-ano by Chiari[11,12], who suggested that they were the source of infection. Most authors believe that the infection of intersphincteric glands that initiate event becomes blocked by infected debris[13,14]. However this may result in as many as 87% of patients with acute abscess(Fig.9) may subsequently develop fistula[15,16]. Acute anorectal abscess and fistula—in-ano are, therefore, generally believed to be acute and chronic manifestations, respectively, of the same disease[17]. There are many ways for dealing with this type of fistula. (staged operations with or without colostomy, advancement rectal flap or coring of the tract).One of these ways is by insertion of a Seton(Fig.9). Seton is a heavy silk or braided nylon.

**Patients and Methods**

A 72 patients were studied retrospectively presented with fistula-in-ano, their age from 19year to 57year, their mean age was34.2. all of them were male 71(98.6%) except one female(1.4). The period of study is 14 years from Jan. 1995 to Dec. 2008 all of them were operated on by one surgeon and the place of study were Iskandariya General Hospital and Hilla General Teaching Hospital. All of them were studied by history and clinical examination. Five(6.9%) of them were operated on for fistula five times previously, twenty(27.8%) operated on for three times for recurrence, while forty(55.5%) patients presented with two operations previously and only seven(9.8%) presented for the first time and have no history of previous surgery. An ordinary investigations which include chest Roentgenogram and simple blood tests were done. Special investigations a fistulogram(Fig.4,5,6) was done only in twenty patients(27.8%) while fifty two patients(72.2%) no fistulogram were done for them and the type of fistula was detected during the surgery. The fistulogram is done by putting a small caliber catheter into the external opening
of the fistula (Fig. 3) and pushing contrast medium then doing x-ray antero-posterior and lateral (Fig. 4, 5, 6). All the patients were given general anesthesia, they put in lithotomy position then probing of the fistula tract starting from external opening traversing the tract through internal opening (Fig. 7, 8) by this we can assess the type whether high or low type, if low type there is no problem and simple total excision is quite enough. The problem is with the high type if we excise it as one stage this will destroy the external sphincter leading to incontinence. After probing the low part is excised up to the level of dentate line, then the rest of the fistula is encircled by the seton and this tied over by putting first knot in the surgical way then the second knot in a way of shoe lace fashion (Fig. 10). After operation follow up of the patient by cramping the seton (Fig. 11, 12) once or twice a week till the thread cut through the fistula and fall completely.

Results
All of the patient who presented with high fistula-in-ano in the period of study had been done for them operation with excision of low part and wrapping a seton over the high part, needs a period from two to six weeks till seton cut through the fistula and fall down except one who cut the seton by himself after the first tie and ran away. The result of histopathology reveals no malignancy, chronic specific infection, or granulomatous infection. The result of histopathology for all specimens were simple fistula lining with non specific infection. All of the studied patients accepted to do the cramping of the seton as an outpatient, except two they couldn’t tolerate it and they didn’t agree to do it only under General Anesthesia.

The period needed for the seton to cut the high tract completely and fall down was ranging from two to six weeks. After two months complete healing was obtained (Fig. 13). after four months we had a sound healing of the wound (Fig. 14). All of them have preserved sphincter action. There was no reported recurrence for all of the studied patients for the period of follow up which was four months.

Discussion
A 72 patients were studied for a period from Jan. 1995 to Dec. 2008. fifty seven patients diagnosed as high type during surgery while 15 were diagnosed before surgery by using fistulogram. We used no MRI because it wasn’t available. In comparison with other studies we find them depend on MRI [18, 19]. When we put our way of treatment in comparison with other studies it is nearly of comparable results. Luzietti and associates [20] studied 150 patients with high fistula they found no recurrence they were tightened the seton during repeated office visits until it is pulled through over 6-8 weeks while in our study the seton fall down within a period of 2 to 6 weeks. They said the advantage of using a seton is that this “staged fistulotomy” allows for progressive division of the sphincter muscle, avoiding the complication of incontinence [20]. The result of treatment in this study in comparison to Deshpande et al [21, 22], we found some difference as we couldn’t report a recurrence, while Deshpande et al recorded 96.5% cure rate. The recurrence rate after conventional treatment of fistula as reported by Bennet [23] was 10 cases out of 118. In this study we report no recurrence. Deshpande et al reported a recurrence
rate of 3.5% (7 cases out of 200) in a 2-9 years follow up. So by this we achieve two things the first is cutting the whole fistula and lay it open and second the cut was gradual and the sphincter kept in place and not retracted a procedure which is not affect the continence.

**Conclusion**
This study is a good surgical way of treatment of high fistula -in-ano as it is easy technically doable follow up with neither complication nor recurrence.

**References**


