Fistula in ano - a new surgical technique

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Abstract

The aim of this study is to present a new technique in surgical management, we called it MELT (multiple encircling ligatures around intersphincteric tract of fistula). The study was done between April 2012 to April 2015 and includes all patients with complex high transphincteric and recurrent fistulas. Study includes all age groups and both genders. Operative details are recorded and compared with other well-known procedures. Post-operative outcomes were analyzed. Out of 56 cases, 41 were males (69%) and 17 were females (31%), with mean age group of 38 years. 10 (18%) cases are recurrent complex fistulas and the rest are high transphincteric type around anorectal ring. Recurrence recorded in 5 cases (9%), mild incontinence reported in 6 cases (11%), no major incontinence occurred, 2 cases of mild bleeding and two cases of post-operative urine retention during 18 months of post-operative follow up. We concluded that our technical easier with relatively lower complication rates in comparison with other well-known surgical operations for fistula-in-ano.

Keywords: Complex; Transphincteric; Fistula-in-ano; MELT

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Introduction

Fistula-in-ano is a common condition but a potentially complex disease process. A fistula can be found in 26-38% of all anorectal abscesses [1]. References to fistulous disease and use of both fistulotomy and Setons can be found in writings of Hippocrates dating from 400 BC [2]. Most fistulas are thought to arise as a result of cryptoglandular infection with resultant perirectal abscess. The abscess represents the acute inflammatory event whereas the fistula is representative of the chronic process [3]. Treatment of fistula-in-ano remains challenging [4]. No definitive medical therapy is available for this condition. Surgery is the treatment of choice, with the goal of draining

infection, eradicating the fistulous tract and avoiding persistent or recurrent disease, while preserving anal sphincter function [5, 6]. Many classification systems have been used for anal fistulas, but the one that is commonly practiced is Parks classification [7], which includes:

1. Intersphincteric type 70%
2. Transphinecteric type 25%
3. Suprasphincteric type 5%
4. Extrasphincteric type less than 1%

Most of these fistulas are treated by simple fistulotomy or fistulectomy with high success rate (Intersphincteric, low transphincteric and submucosal types) [8-11]. The difficulty arises when we are dealing with high transphincteric, suprasphincteric and complex fistulas (recurrent fistula, anterior fistula in female, and fistula with multiple tract), because of risk of damage to anorectal ring (deep part of external sphincter and puborectalis), and because of risk of recurrence. Many methods have been used to treat such complex fistulas like :

1. Seton (cutting one stage or two stages) [11, 12].
2. Mucosal advancement flap [14-16].
3. Plugs and adhesives (fibrin glue and collagen glue) [17-19].
4. LIFT (ligation of intersphincteric fistulous tract) [20].
5. Diversion is indicated in rare cases.
6. expanded adipose-derived stem cells (ASCs). A new method of cell therapy [21].

Patients and methods

A prospective study conducted between April 2012 to April 2015 which includes 56 patients of all age groups and both sexes with mean age of 35 years. All cases are selected as complex high transsphincteric and suprasphincteric fistulas with 10(18%) cases of them are recurrent fistulas. All patients are preoperatively evaluated by history, physical examination and in some complex cases fistulogram and pelvic MRI. In the theatre all patients operated in lithotomy position under general, spinal or caudal anesthesia. All patients operated by the same surgical team and detailed informed consents have been

taken from all patients preoperatively. Our operative technique we called it MELT (multiple encircling ligatures around tract of fistula) we start dissection and propping of the tract after identification of external and internal openings. Then we identify the anorectal ring (deep part of external sphincter and puborectalis). We start dissection around the external opening and fistulous tract until we reached near anorectal ring and remove all tissues distal to this point (Fig.1). After that we put multiple encircling ligatures of 0 vicryl suture material around the remaining part of fistula until the internal opening without cutting the deeper part. Hemostasis done and wound left opened and packed with gauze. Postoperative compıications such as bleeding, urine retention, incontinence, stenosis , delayed wound healing and recurrence were evaluated and analyzed. Patients were followed weekly during the first month and then monthly for a mean follow up period of 18 months

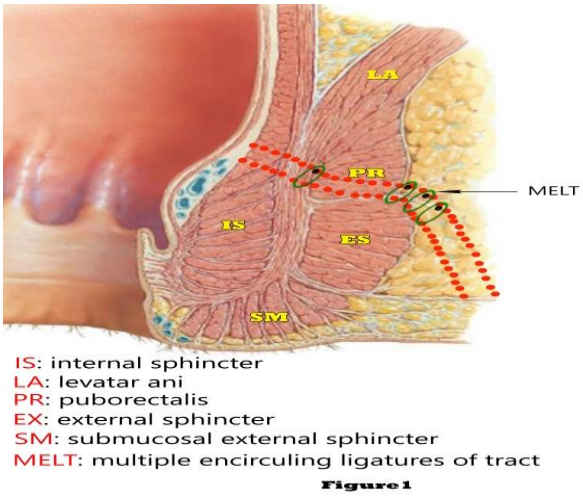

Figure 1

MELT Surgery (Multiple Encircling Ligatures Around Tract of Fistula)

In our study, 56 patients operated upon with mean age of 35 years. mean duration of symptoms before surgery is 6 months.25 patients(44%) give history of perianal abscess drainage either spontaneously or by surgery. The type of fistula was high transphinecteric in 36 cases (64%) , complex type with multiple tracts in 9 cases (16%), suprasphinecteric type in one case (1.7%), and 10 cases (18%) were recurrent (Tab.1).

Table 1

Types of fistulae

Type of fistula	Number	%
High transsphinecteric	36	64
Suprasphinecteric	1	2
Complex	9	16
Recurrent	10	18
total	56	100

patients are followed up for 18 months, short and long term post-operative complications are recorded. mild bleedings occurred in two cases and controlled by re-packing ,and no severe bleeding that need reoperation happened. post-operative urine retention occurred in 2 patients (3.5%),and treated by catheterization. Mild gas incontinence occurred in 6 cases (11%), and no major stool incontinence happened. severe anal stenosis that required Lord,s dilatation occurred in one case (1.7%). Frank recurrence occurred in 5 cases (9%), usually in complex fistulas with multiple tracts (Tab 2).

Table 2.

Incidence of postoperative complication

Complication	Number	%
Mild bleeding	2	3.5
Severe bleeding	Nil	0
Urine retention	2	3.5
Mild incontinence	6	11
Severe incontinence	Nil	0
Recurrence	5	9
stenosis	1	1.7

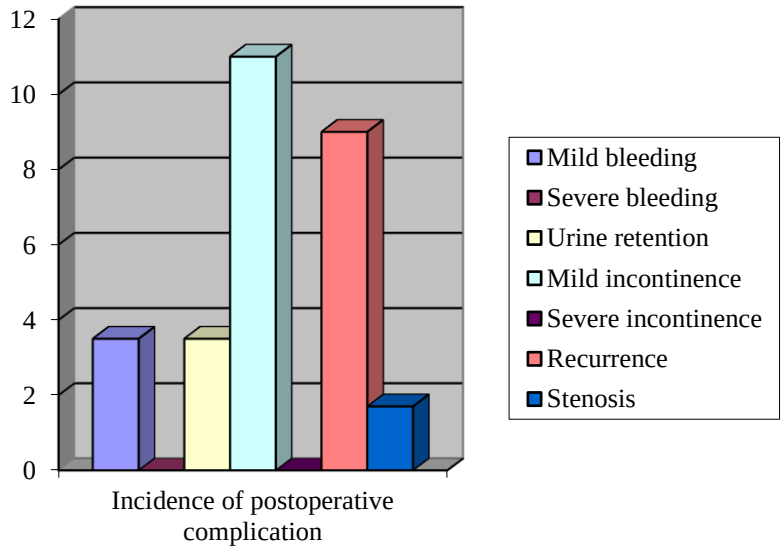

Figure 2.

Incidence of postoperative complication

Discussion

Surgery for an anal fistula may result in recurrence or impairment of continence. The ideal surgery should be associated with low recurrence rate, minimal incontinence and good quality of life. In our study we evaluate the results of the most widely used procesures for management of complex and recurrent fistulas and compare them with our results. In cutting seton, the recurrence rate is about 8% ,with minor and major incontinence being reported in 34 to 63% and 2 to 26% of patients respectively [22]. Cutting seton is also associated with significant morbidity related to discomfort from seton. In mucosal advancement flap , successful healing of the fistulahas been demonstrated in 55 to 98% of patients [23, 24, 25]. However this procesure is technically demanding, and although the sphinecter mechanism is not divided during advancement flap repair of the fistula ,minor incontinence has been found in up to 31% of patients and major incontinence in up to 12% of patients [24]. In LIFT (ligation of intersphinecteric tract) procesure [20, 26], the success rate reach to 82-94% with low incontinence rate. The use of fibrin sealants and more recently collagen plugs has been extensively studied in the last years with sucess rate of 62-69%, it is easily applicable with low post-operative discomfort and can be used with other procesures such as seton or advancement flap [27, 28, 29]. In our study that we called it MELT (multiple encirculing ligatures around tract of fistula), the success rate

reach to 91% with no major incontinence and minor incontinence rate of 11% (Tab.3).

Table 3.

Comparative outcomes betweem MELT and other surgical techniques

procesure	Success %	Major incontinence %	Minor incontinence%
Seton	92	2-26	36-56
Advancement flap	55-98	12	20
Lift	82-94	-	5
Fibrin and colagen plugs	62-69	-	4
melt	91	-	11

Conclusion

To colorectal surgeons, the complex anal fistula remain a chalenging condition to manage despite the best of technologic advances. Therefore the colorectal surgeon should become familiar with various old and new techniques. The advantages of our procesure include preservation of anal sphincter, minimal tissue injury, short healing time and its being procesure that is relatively easy to perform. Additionally ,even if the fistula is not healed successfully, the MELT procesure may convert a difficult-to-treat transsphinecteric fistula into an easier-to-manage intersphinecteric type.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

All authors read and approved the final manuscript.

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