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IMPROVING OUTCOME OF SURGERY FOR HIGH PERIANAL FISTULA

By
Abdel Azeim M. Ali ,Ahmed M. Seleim* ,Ibrahim E. Dawoud* ,Mohamed Y. El Gindy*, Ahmed. A. Abdel Razik***
Department of General surgery* and Radiology* * Faculty of Medicine
Mansoura University, Egypt

Objective. The study is randomized controlled trial aiming at comparing the outcome of surgery for high perianal fistula in 2 groups of patients. Depending on preoperative assessment either traditionally by fistulography in group A or by MRI in group B. Both groups followed up clinically and by manometry. This study is a trial to improve the outcome of surgery for the high perianal fistula.

Patients and methods: This study included 2 groups of patients each group includes 12 patients with high perianal fistula, non recurrent evaluated in group A by clinical examination, fistulography careful propping under anesthesia, occasional injection of methylene blue to define internal opening. In group B. all patients underwent preoperative contrast enhanced Magnetic resonance image (MRI) of the perianal region. Both groups followed up clinically to assess wound healing, cure rate and by manometry to assess the patient continence.

Results: There were prominent superiority for the MRI in the assessment of primary track, secondary track, Horseshoe track, internal opening, and significant superiority in detection of Abscess (6patients) in group B versus (3patients) in group A. RAP dropped in both group at 10 weeks postoperative (70.04 ± 598) in group A and 74.4 ± 7.5 in group B. at 24 weeks slight improvement in both group but more in gpB. MSP dropped at 10 weeks post operative in both groups more in gp A. By 24 weeks improvement of MSP was noticed specially in gpB. No significant difference between operative time, hospital stay in both groups but incontinence recorded as 25% in gpA and 16.7% in group B and recurrence recorded in 2 patients in gpA and one patient in group B.

Conclusion: Good assessment of high perianal fistula preoperative resulted in improvement of the outcome of the fistula surgery.

Keywords; *(High perianal fistula, MRI, surgery)*

Abbreviation: **gp: group**
Po: preoperative
RAP: Resting anal pressure
MSP: Maximal Squeeze pressure

INTRODUCTION

The Configuration of the high perianal fistula and its relation with internal and external shincters are very important factors affecting the results of surgical management. Preoperative definition of the course of the fistulous track (s) and internal opening plays a primary role in adequate planning of operative approach to minimize iatrogenic damage of the sphincters, fistula recurrence and decrease incontinence.

Moreover incorrect definition of fistula anatomy could be the main reason for early recurrence of fistula after surgical treatment.

Unfortunately physical examination is often not accurate to elucidate all fistula characters and fistulography could give misleading data.

In our study, physical examination, fislulography, MRI were matched with surgical features to establish their accuracy in preoperative perianal fistula assessment. Preoperative and postoperative manometry was done to assess patient continence.

PATIENTS AND METHODS

From January 1998 to September 2000, 24 consecutive patients with high fistula-in-ano 18 male, 6 females mean age 36 years (18-61) entered this study none of the patients underwent previous treatment for fistula.

In group A (12 patients) diagnosis of the type of the fistula was achieved by

1. Rectal examination
2. Proctoscopy to define internal opening if possible.
3. Fistulogram
4. Examination under anesthesia
5. Carful probing of the tracks

Occasional injection of Methylene blue for localization of internal opening.

In group B:

Preoperative perineal MRI (Fig. 1,2,3) identify the primary track according to parks et al as intersphincteric, transsphencteric, extrasphincteric superashicteric secondary branches or collections.

Both groups were operated by the same technique (seton application).

Under General anesthesia in the operating room with the patient in lithotomy position, flexible probe was passed through the external opening till the internal opening identified (Fig 4).

- excision of the lower part of the track perianal epidermis and subcutis till below anonectal ring by diatheray (Fig 5)..

- 4 Threads of silk suture No 1 are tied to the end of the end of the probe and passed through the track (Fig 6).

- Seton was tied around the upper part of the track (Fig 7).

- After 6-8 weeks threads were removed.

- Follow-up: patients were followed up at outpatient weekly till wound healing then at 2 months interval for assessment of the progress of wound healing and any local problems as incontinence or recurrence.

RESULTS

Table I

	GPA(12)	*GPB(12)*	*fisher exact test**
1ry track	7	10	P = 0.22
2rytrack	8	10	P = 0.32
Horse shoe track	8	10	P = 0.32
Abscess	3	6	P = 0.21
Internal opening	4	6	P = 0.41

* Statistically significant

Table II

	GPA (12)	*GPA (12)*	*t-test*
RAP			
Po	85.4 ± 5.5	92.5 ± 21.96	P = 0.29
10 w	70.04 ± 5.98	74.4 ± 7.5	P = 0.19
24 w	81.4 ± 3.1	84.2 ± 3.5	P = 0.095

Table III

	$GPA_{(12)}$	*$GPA_{(12)}$*	*t-test*
RAP			
Po	164.2 ± 9.8	170.8 ± 9.4	P= 0.11
10 w	149.3 ± 5.5	154.8 ± 3.1	P= 0.075
24 w	151.5 ± 4.5	154.2 ± 3.95	P= 0.013

Table IV : ***Operative and pest operative outcome in both groups***

	gp A	*gpB*
Operative time at seton application (mm)	25 mm	23 mm
Hospital stay (days)	1.5	1.5
Incontinence %	3 (25%)	2 (16.7%)
Recurrence%	2(16.7%)	1(8.3%)

Statistics was expressed as fisher exact test and by the student t-test.

Table I: Shows the assessment of both groups as regard primary, secondary, horseshoe tracks and internal opening also show presence or absence of abscess cavity.

Table II, III: Show preoperative and postoperative mean resting and maximal squeeze anal pressure after surgery by 10 weeks and 24 weeks in both groups. There were more drop in both resting and maximal squeeze anal pressure in group A. after 10 ws and 24 ws postoperative.

Table IV: Shows the evaluation of surgical outcome for both groups as regard operative time hospital stay and postoperative complications specially incontinence and recurrence.

Noncontrast multiplanar multiple pulse Sequences MRI of the anal region shows:

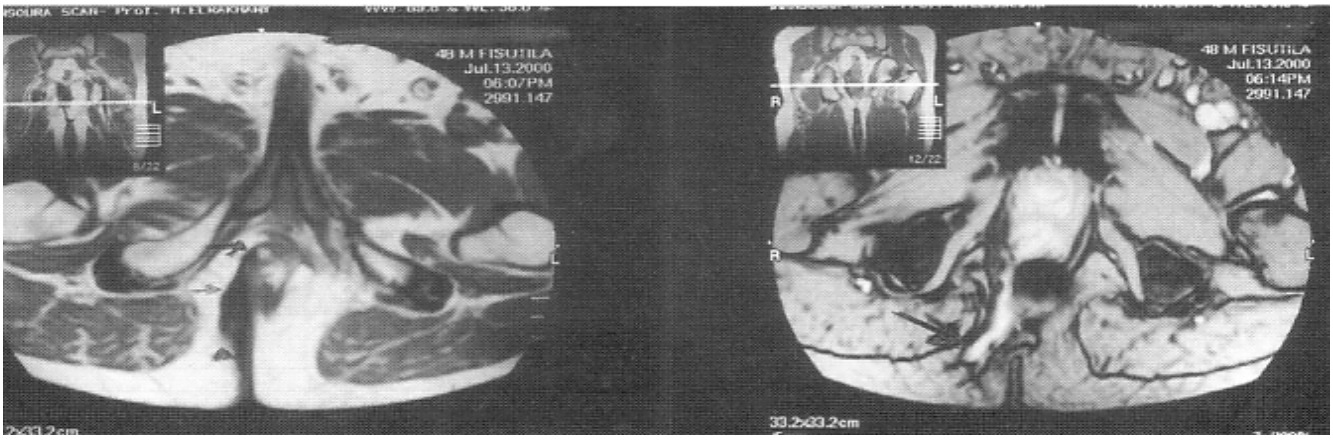

Fig (1): Above: Axial T_1W_1 shows: Ahypointense fistulous track (arrows) pass between external and internal anal sphincter; External opening (arrow head).

Fig (2): Below: Axial gradient image show: A linear perianal fistulous track (arrow) it exhibits high SI.

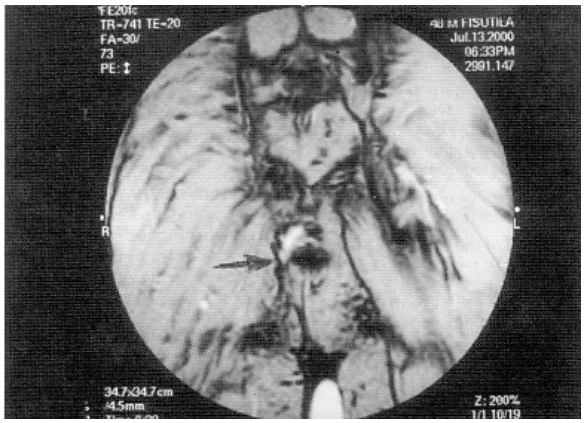

Fig 3: Coronal gradient image shows high SI of the fistula (arrow).

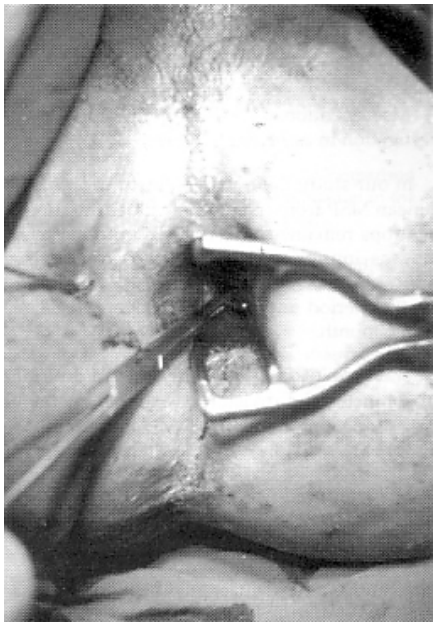

Fig (4) To the left: probing

Fig (5): To the Right: excision of the lower part of the fistulous track.

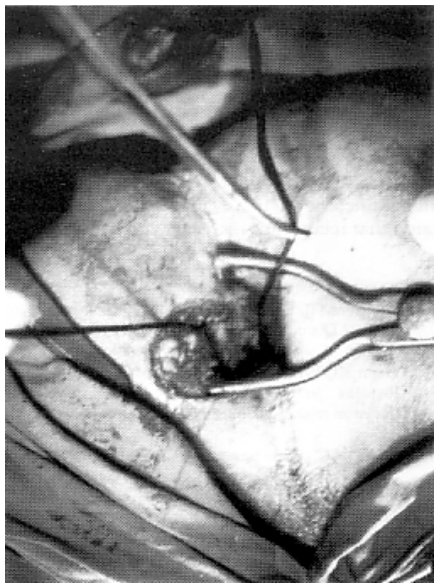

Fig (6): To the left: passage of the seton.

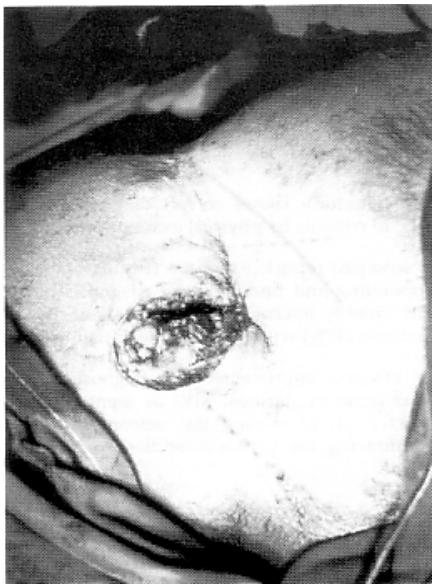

Fig (7): To the right: tieing the seton

DISCUSSION

Several options have been proposed for surgical management of the high perianal fistula. However, there are no standard criteria to enable the best surgical technique to be selected.

One of the most important reasons for this is the lack of adequate preoperative evaluation of the fistula criteria including primary and secondary tracks, horseshoe extensions, and internal openings.

Many efforts have been made to increase preoperative diagnostic accuracy physical examination remains the first step in the evaluation. In fact external opening visualization palpation of the track, digital exploration of the anal canal and rectum, careful probing the fistula offers useful details and information to the surgeon. However external propping may cause new tracks or internal opening, more tissue injury, increase recurrence & minor or major incontinence.(1)

Physical examination and fistulogram in our study demonstrated primary track in 7-Patients (58%), secondary track in 8 patients in (66.6%) and horseshoe in 8 patients (66.6%). In gpB evaluated by MRI all the above were evaluated in 10 patients (83.3%) evident improvement in detecting suppuration with fistula in gB in 6 patients (50%) compared to 3 patients (25%) in gp A.

Internal opening was assessed in 4 patients gp A (33.3%) and in 6 patients (50%) in gp B.

Deen et al(2) in his study evaluated only 50% of the internal opening and 27.3% of horseshoe tracks by physical examination.

Poen et al(3) in his study shows correct diagnosis of primary track in 38% of patients by physical examination.

Kuijpers and schulpen reported that the fistulography is extremely disappointing and unreliable for diagnosis of the fistula as it only identify internal opening in 24% of the patients and in 6 patients (17%) with extrasphinteric fistula.

In our study obvious improvement of diagnosis of fistula anatomy was done by perineal MRI as mentioned above it was reflected on improving the outcome after surgery due to minimizing the fistula dissection to great extent at surgery.

It was mentioned that concealed Abscesses and secondary tracks are particularly well demonstrated by MRI(4,5).

MR imaging accurately delineate the anatomy of the fistulas in most nine of ten cases(4,5).

Also mentioned that MRI is superior to any other investigation in assessing fistula(6,7).

In our study there were evident drop in the mean and the mean MSP from the normal values but more in group A. This drops remained till 24 weeks but long term follow up. RAP was improved. Hikada (1997) found that there was significant decrease in the RAP in the immediate post operative period and partially recovered in *85%* of patients within 6 month.

The drop of RAP is mainly due to division of internal anal sphincter and division of external anal sphincter adds more reduction in both RAP and MSP specially in transsphenteric fistula (8).

MSP reduced in branched fistulas than in simple fistulas (9,10,11,12) .

Mild disorders of continence are not uncommon complications after fisluectomy(I 3) In our study 3 patients in group A (25%) complained of temporary incontinence one patient to liquid stool and 2 patients to flatus compared to 2 patients in group B. Both were incontinent to flatus.

Garcia et al (1996) reported 37% incontinence of intersphincteric fistulas, 54% of trans-sphincteric fistulas, they reported that incontinence after surgical treatment of fistula in ano increased with the complexity of fistula (14)

In our study recurrence rate was in 2 patients (16.7% in group A one of them was complex fistula compared to one recurrence in group B (8.3%) which was extrashpincteric fistula.

Gracia et al (1996) reported recurrence in 4% of intersphincteric fistulas and 7% of transsphincteric and stated that recurrence increase with complexity of fistula (14).

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