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Outcome of treatment of high Fistula-in-ano, with partial fistulectomy plus seton placement.

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ABSTRACT… Objective: To determine the efficacy of partial fistulectomy and seton placement in high Fistula-in-Ano patients in terms of recurrence and incontinence rate. **Study Design:** Descriptive study. **Setting:** Department of General Surgery, Khyber Teaching Hospital Peshawar. **Period:** January to December, 2018. **Material & Methods:** This study was conducted over 50 patients with diagnosis of high fistula-in-ano, treated with with partial fistulectomy and seton placement. Patients follow up was done for one year for recurrence and incontinence. **Results:** Out of 50 patients, 28(56%) were male and 22(44%) were female. Overall male to female ratio was 1.27:1. Average age of patient was 36.88 years$\pm$6.63 SD. Flatus Incontinence was observed in single case (2%), no patient reported stool Incontinence. Recurrence of disease was found in 2 patients (4%). All patients were followed for one year. **Conclusion:** This technique for treating high Fistula-in-ano showed overall low recurrence and incontinence rates during follow up, this procedure reduces morbidity and costs associated with recurrent surgery.

Key words: Fistula-in-Ano, Fistulectomy, Incontinence, Recurrence, Seton.

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INTRODUCTION

Fistula-in-ano is abnormally formed epithelized tract connecting lower gastrointestinal tract mucosa with perianal skin.[1] The incidence of this disease is 5.6 and 12.3 per 100,000 women and men respectively, and predominantly presents in middle age (third and fourth decade).[2]

Fistula-in-ano primarily develops, post crypto glandular infection of anal mucosal glands after blockage of anal crypts by thick debris, resulting in abscess formation at inter-sphincteric space, which extends its way in least resistance area, hence develop fistula formation in approximately 7 to 40% of cases.[3]

Low fistula-in-ano involves a small or no part of sphincter muscle while high fistula-in-ano involves major part of sphincter complex.[4]

Management of high fistula-in-ano is very complicated and a real surgical challenge. Fistulotomy (procedure of lay opening the fistula tract) and fistulectomy (excision of whole fistula tract) is only possible in low lying Fistula-in-ano and cannot be done in high or complex fistulae due to danger of anal sphincter injury which results in stool incontinence.[5] So, various alternative procedures have been fashioned to avoid anal sphincter injury, which include treatment with Seton (draining or cutting), Anal mucosal/full thickness advancement flaps and fibrin glue application. But for every procedure different recurrence and incontinence rate is reported in litrature.[6]

Seton is a type of thread which causes inflammatory reaction, after passing through the tract of fistula. It initially cuts the sphincter muscle and surrounding tissues followed by healing / fibrosis, which results in fixing the sphincter muscle complex. Hence, maintaining the continuity after cutting.[7,8] Secondly, it also drains the tract and surrounding area, which results in obliteration of fistula tract.[9] Various materials can be used as Seton for treatment of high fistula like

rubber band, silk, silastic tube, vascular loop, braided polyester, nylon and polypropylene.[7]

In literature there is a great variation of outcome of various procedures in terms of incontinence and recurrence rate as no procedure is considered the gold standard for treating high Fistula-in-ano currently.[10] The rationale behind our study was to determine local statistics and to share our experience of management of high fistula in ano with partial fistulectomy and Seton placement.

MATERIAL & METHODS

This Descriptive study was carried out at Department of General Surgery, Khyber teaching hospital Peshawar from 1st January to 31st December, 2018. Total duration of study was 1 year. The study was approved by institutional ethical committee (620-23/E). The study was done on 50 Patients. Consecutive non-probability sampling was done. All patients with high Fistula-in-ano having age 18 to 60 years, of either gender were included in this study.

Patients with associated anorectal diseases like anal fissure, malignancy and piles, patients with co-morbidities like Diabetes and those patients who were already on steroids or immunosuppression were excluded from the study.

All cases with diagnosis of Fistula-in-ano were admitted from outdoor patient department. After detailed history, clinical examination was done and Routine Pre-operative investigations (FBC, Blood urea, serum creatinine, urine examination and ECG) were done. Verbal as well as written consent were taken from all patients. Type of fistula was labelled on basis of DRE, MRI findings and per-operative findings. High fistula-in-ano patients were involved in this study and all others patients were excluded.

Procedure was performed in lithotomy position in general or spinal anesthesia, by experienced consultant surgeon. Thirty minutes before starting the procedure pre-operative antibiotics injection Ceftriaxone 1gm and infusion Metronidazole given to every patient. During procedure, internal opening of fistula was localized by palpation and then by injecting solution of hydrogen peroxide in external opening and observing it passage through internal opening. Then gentle probing of the tract with help of a metallic probe was performed. Fistulectomy up to the inter-sphinteric space was done followed by passage of Prolene 1 suture through the remaining tract with the help of metallic probe, and was tied loosely to act as draining Seton initially. Then after three weeks Seton was tightened firmly to act as cutting Seton. Postoperatively antibiotic coverage was given for 24 hours along with good analgesia. All patients were educated for wound care with daily pyodine sitz bath and were called for two weekly follow-up. Seton was tightened at each follow up if needed. Seton cut completely through the fistula tact, sphincter muscle and surrounding tissue with passage of time and finally was removed then. At follow up wound healing assessment, fecal/flatus continence and recurrence of disease was recorded if found. Postoperatively wound healing, anal continence, and recurrence were assessed on regular follow-up every month for 06 months and then 02 monthly for the next 06 months. Total follow-up was up to 12 months. A study proforma was designed to collect data. Patient demographics, wound healing, Incontinence and recurrence rate, were recorded for each patient. The data were analyzed in SPSS version 20.

RESULTS

Total 50 patients were studied. Out of which 28(56%) were male and 22(44%) were female. Male to female ratio was 1.27:1. Mean age was 36.88 years $\pm$ 6.63SD. The mean operative time was 34.56 $\pm$ 5.67 minutes. Mean hospital stay was 29.87$\pm$2.43 hours. Mean operative blood loss was 60.50$\pm$10.50 ml. Mean wound healing time was 67.86 days$\pm$11.57 SD. Flatus incontinence was observed in 1(2%) and stool Incontinence in none patients. Recurrence was found in 2(4%) patients during one year follow up. (Table-II)

Variable	Mean	SD
Age(years)	36.88	+6.63
BMI	22.4	+3.6
Gender	**Number**	**Percentage**
Male	28	56%
Female	22	44%
Total	50	100%

Table-I.

Variable	Number	Percentage
Recurrence	2	4%
Flatus incontinence	1	2%
Stool incontinence	0	0%

Table-II.

DISCUSION

Anal mucosal Crypto glandular infection results in inter-sphincteric space abscess formation and future development of fistula formation in approximately in 1/3 of the cases. Fistula-in-ano has a higher incidence in males than in females and predominantly occurs in the third and fourth decade of life. In this study we have experienced more prevalence of the disease in males (56%) in comparison to females (44%). The incidence of disease in females is believed to be under-reported and this may be because of social and cultural factors that the females' patients prefer to visit private clinics to female doctors.[2,11]

Treating high anal fistula has remained a challenge for doctors for millennia. Dating from 400 BC, in the writings of Hippocrates, the use of both fistulotomy and Seton can be found.[12]

Current United States demographics for fistula-in-ano are difficult to estimate, as since 1979 the Health Care Project has only recorded inpatient procedures.[13] Sainio in 1984 in Helskini city published incidence of 8.6 per 1000000 per year.[14] A more recent analysis performed by Zanotti in 2007, reported incidence of 1.04 and 2.32 per 10000, in Spain and Italy respectively.[15]

A systematic review was performed by Vial et al, comprising of eighteen studies. They reported overall 5% of recurrence and 5.6% rate of fecal incontinence for patients treated only with Seton and intact intraoperative anal sphincter, while 3% of recurrence and 25.2% of incontinence rate was noted in patients in whom intraoperative anal sphincter was divided.[16] Also, another study reported an overall 67% of fecal incontinence rate in procedure where anal sphincter was divided.[17]

Tyler et al published treatment success rate of 62% following staged procedure, first by Seton placement followed by fibrin glue application or advancement flap, without division of sphincter.[18]

Also, study by Loungnarath et al reported overall 69% of recurrence with application of fibrin glue, showing failure of this modality of treatment for fistula-in-ano.[19]

Furthermore, Aguilar et al shared results of treating 189 fistlua-in-ano patients, treated with mucosal advancement flap. Recurrence noted in 3 cases, flatus incontinence in 7% and no stool incontinence reported. While our study showed recurrence rate of 4%, flatus incontinence of 2% with 0% of fecal incontinence.

However, limitation of our study was small sample size. To evaluate the efficacy of the above mentioned procedure further studies should be carried on large population.

CONCLUSION

This technique for treating high Fistula-in-ano showed overall low recurrence and incontinence rates during follow up, thus reducing morbidity and costs associated with recurrent surgery for Fistula-in-ano. To evaluate the efficacy of the mentioned procedure further studies are needed on large population.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

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2	Shams uddin	Statistical expertise and result compilation.	
3	Muhammad Danish Yasin	Drafting of manuscript, review of discussion.	
4	Hafiz Bilal Ahmed	Statsitical analysis and discussion literature review.	