

## Original Article

## OUTCOME OF TREATMENT OF FISTULA-IN-ANO

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**Objective:** To determine the frequency of recurrence and incontinence as outcome from surgery for fistula in ANO.

**Material and Methods:** We reviewed the records of consecutive series of 30 patients who underwent fistulotomy, fistulectomy and two stage seton fistulotomy between April 2006 to April 2007. Preoperative continence status of every patient checked before surgical intervention. To assess the outcome of treatment of fistula in ANO. Follow-up in outpatient clinic advised as scheduled visit on 1st, 2nd, 4th, 6th and 12th week, continence was evaluated using the validated Saint Marks score (Vaizey scale). The outcome variables analyzed were recurrence and incontinence. Fistula were intersphincteric in 12 patients, trans-sphincteric in 17 patients and extrasphincteric in 1 patient. Procedures included fistulotomy (n=12), fistulectomy (n=12) and two stage seton fistulotomy (n=6).

**Results:** The study examined 30 patients undergone surgical treatment for fistula in ANO. There were 22 (73.3%) males and 8 (26.7%) females. The mean age of patients was 36 + 12.24 years with ranges between 16 - 60 years. About 12 (40%) patients have low intersphincteric fistula. About 17 patients have transsphincteric and 11 (36.66%) have low transsphincteric and 6 (20%) patient have high transsphincteric. Nearly equal number 12 (40%) patient were reported with fistulotomy and fistulectomy.

**Conclusion:** For low and simple fistulas, effective treatment is by fistulotomy, when minimal anal sphincter is involved fistulectomy is also safe but has to be performed with great care, incidence of impaired continence was lower in fistulotomy group of patients as well as recurrence rate is also lower than fistulectomy group. Those patients who had multiple abscess drainage or previous fistula repairs and patient with high fistula and infection. Avoiding the excessive sphincter cut in these patients would be wise to use a two stage seton fistulotomy. This is involved the insertion of loose seton for abscess drainage followed by scheduled secondary fistulotomy.

**Key words:** Fistula in ANO, incontinence, recurrence.

### Introduction

Blood fistula in ano is a common cause of chronic irritation to patient as well as surgeon. Following incision and drainage of ano rectal abscess, 34% patients develop fistula in ano.<sup>1</sup>

Anal incontinence is not an infrequent complication of surgery for anal fistulae. Continence is maintained partly under voluntary contraction by striated muscles of external sphincter and levator ani and partly through involuntary tone, which is maintained by smooth muscle of the internal sphincter.

Laying open of fistula tract is a simple and effective therapy for intersphincteric type of anal fistula but incidence of poor continence control after surgery 38% and recurrence rate of 6.6%<sup>4</sup> noted. A novel technique of radiofrequency fistulotomy for the treatment of low fistula in ano (low trans-sphincteric and intersphincteric) practiced by Pravin in 232 cases, the recurrence rate was recorded as low as 1.5% none of patients had any interference with

continence.<sup>5</sup> Partial or complete division of external anal sphincter for complex trans-sphincteric supra-sphincteric and extra-sphincteric fistulas may precipitate worsening degree of incontinence.<sup>6</sup> In this circumstance, sphincter conserving treatment including elastic one stage cutting seton,<sup>7</sup> Loose seton,<sup>8</sup> endorectal advancement flap,<sup>9</sup> fibrin adhesive<sup>10</sup> and re-routing<sup>11</sup> are described in literature. The number of procedures mentioned indicates that there is no single established way of treating these high fistula.

In patients having low or high fistula operated with different strategies, following results were seen, over all recurrence was 4.44% for low fistulae and 11.11% for high fistula in ano. Minor incontinence was noted following surgery for high variety. No such complication occurred in low variety.<sup>13</sup> This study was being conducted to find out recurrence and postoperative continence status corresponding to method used.

Fistula anatomy can be varied leading to inadequate or inappropriate surgery resulting in either recurrence or

to sphincter damage causing to continence problems. In this study we have determined the frequency of recurrence and incontinence as outcome from surgery (fistulotomy, fistulectomy and two stage seton procedure) for fistula in ano. In the present study we investigated outcome after fistulotomy for intersphincteric fistula, fistulectomy for low transsphincteric and extrasphincteric and two stage seton fistulotomy for high transsphincteric fistula. Thus a total of 30 patients (22 males and 8 females) who underwent fistulotomy, Fistulotomy and TSSF for perianal fistula were the subjects of this study.

### Materials and Methods

This study was conducted in the Department of General Surgery, Ward-2, Jinnah Postgraduate Medical Center Karachi. Study design is descriptive study. Duration of study was 1 year. Total 30 postoperative cases of fistula in ano were included in this study. A purpose, non-probability consecutive mode of sampling was adopted i.e. 30 patients presenting in the outpatient clinic who satisfied the fistula in ano was diagnosed by clinical features like perianal discharge and presence of external opening around anus and induration in digital rectal examination and in few cases fistulogram and MRI also performed in patients with uncertain fistula tract anatomy. Surgery was directly offered to patients with fistula in ANO, selective preoperative fistulogram, MRI was offered for patients who were uncertain fistula tract anatomy in clinical examination.

All patients were asked to complete a written questionnaire, continence were evaluated before surgery and during postoperative scheduled follow-up (1st, 2nd, 4th, 6th, 12th weeks). Continence was evaluated using the Saint Marks score (Vaizey scale). The total score on vaizey scale ranged from 0 (complete continence) to 24 (complete incontinence).

Patients having reappearance of fistula or development of or close to original fistula was considered recurrent of fistula. Follow-up in outpatient clinical advised as scheduled visit on 1st, 2nd, 4th, 6th and 12th week. During this, a careful history (irritation), physical examination, including per-rectal examination, followed by proctoscopy was performed. Patients were examined in the left lateral decubitus position underclothing was inspected for soiling and staining by stool, pus or mucous. The buttocks gently spread and the external perianal area examined for irritation, fistulous tracks

and hygiene, scar of previous surgery, was noted. Abnormalities in the anal verge from previous surgery or a gaping anus indicate the marked loss of function. Patient was asked to contract his or her external sphincters and anal tone was noted. wound healing was surgical treatment of fistula in ano is associated with significant risk of recurrence, due to premature closure of wound edges, During digital rectal examination, the resting tone of anal canal as well as voluntary contraction of anal sphincter was noted. Both male and female patients aged  $\geq 15$  years operated for perianal fistula included in this study while patients suffering from perianal fistula, secondary to tuberculosis, crohn's disease, ulcerative colitis and malignancy.

### Data collection:

Patients who fulfill the criteria were included in this study. Informed consent was taken for registration in this study and also for post operative perianal wound examinations. This study was aimed to assess the incontinence and recurrence for fistula in ano by a colorectal surgeon at Surgical Ward-2, Jinnah Postgraduate Medical Center Karachi. Hospital files, operative reports and out patient records was prospectively reviewed. Incontinence was assessed by using patient based scale "Saint Marks Score" this was calculated to assess the degree of incontinence. Patients was followed up at 1st, 2nd, 4th, 6th and 12th weeks for fistula healing and continence status. Patients having or development at or close to original fistula was considered recurrence of fistula.

### Data analysis:

The data obtained through proforma was converted to database in SPSS version 20. Frequency and percentage of qualitative variables including gender, recurrence of fistula in ano and incontinence was presented, mean + standard deviation of age will be presented.

### Results

A total of thirty patients were included in this study. Out of 30 patients, 22 (73.33%) patients were males and 8 patients (26.66%) females. Male / female ratio was 2.5:1. mean age of patients was 36+- 12.24 years (range 16-60 years).

Fistulas were low in 23 patients (76.66%), high in 6 patients (20%) and extrasphincteric in 1 patient (3.33%). They were intersphincteric in 12 patients (40%), trans-sphincteric in 17 patients (56.66%), (low transsphincteric in 11 patients (36.66%) and high trans-sphincteric in 6 patients (20%) and extrasphincteric in 1 patient (3.33%).

**Table-1:** Demographic characteristics of patients(n=30).

Characteristics	Mini-Maxim Value	Mean ±SD
Age (years)	16-60	36± 12.24
<b>Gender Distribution</b>		
Male	22	73.3
Female	8	26.7

**Table-3:** Operation (n=30).

Operation	No of Patients	Percentage
Fistulotomy	12	40
Fistulectomy	12	40
Staged fistulotomy	06	20

**Table-4:** characteristics of patients who underwent fistulotomy, fistulectomy, TSSF.

	Fistulotomy	Fistulectomy	TSSF
Age (years)	16-42	25-60	26-58
Male/Femal Ration	8/4	9/3	5/1
Duration of Symptoms (Months)	11(1-48)	10(1-36)	53(12-100)
Previous drainage presence/absence	4/8	1/11	2/4
Previous fistula absence	1/12	0/12	3/3
Location of internal opening anterior/lateral/posterior	4/2/6	2/3/7	0/0/6

**Table-5:**Pre-operative incontinence saint mark's score

Saint Mark's Score	No of Patients	Percentage
0	29	96.7
2	1	3.3

**Table-6:** follow up saint mark's score week wise.

Incontinence Score Week 1st	No. Of Patients	Percentage
0	24	80
3	2	6.7
4	1	3.3
5	2	6.7
6	1	3.3
<b>Week 2nd</b>	0	24
	3	2
	4	1
	5	2
	6	1

<b>Week 4th</b>	0	24	80
	3	2	6.7
	4	1	3.3
	5	2	6.7
	6	1	3.3
<b>Week 6th</b>	0	24	80
	3	1	6.7
	4	1	3.3
	5	2	6.7
	6	1	3.3
<b>Week 12th</b>	0	24	80
	3	2	6.7
	4	1	3.3
	5	2	6.7
	6	1	3.3

**Table-7:** Follow up re-appearance of fistula according to weeks (n=30).

Re-appearance fistula week wise	(Yes)	(%)
Week 1st	1	3.3
Week 2nd	1	3.3
Week 4th	1	3.3
Week 6th	2	6.7
Week 12th	2	6.7

**Table-8:** development of additional of fistula according to weeks (n=30).

Development of additional fistula week wise	(Yes)	(%)
Week 1st	1	3.3
Week 2nd	1	3.3
Week 4th	1	3.3
Week 6th	1	3.3
Week 12th	1	3.3

**Table-9:** Postoperative outcome (n=30).

Outcome variables	No of Patients	Percentage
Incontinence	6	20
Recurrecne	2	6.7
Lost of Follow-up	0	0

**Table-10:** Postoperative outcome (n=30).

Operation	Incontinence (n) Yes	Percentage
Fistulomy	2	16.7
Fistulectomy	3	25.0
Staged fistulotomy	1	16.7
<b>Total</b>	<b>2</b>	
<b>Recurrence</b>		
Fistulotomy	0	0.0
Fistulectomy	1	8.3
Staged fistulotomy	1	16.7
<b>Total</b>	<b>2</b>	

## Discussion

Surgical treatment of fistula in ano should aim at the complete elimination of the fistula while maintaining sphincter muscle function as much as possible. The criterion for determining success or failure of surgery is the incidence of recurrence or incontinence.

The series included 30 well-documented patients who were treated for perianal fistula. Age of the patients ranged from 16 years to 60 years. Mean age was 36 years, while in study of 54 cases Khalid observed a high incidence in third and fourth decades.<sup>43</sup> In a study of 108 cases Tahir found peak occurrence in third and fourth decades.<sup>44</sup>

In a study of 45 cases Saif found mean age incidence was 40 years,<sup>45</sup> In a study of 85 cases Takayuki found mean age incidence was 42.5 years.<sup>46</sup> Takayuki and Makoto also quote, the mean duration of symptoms before surgery at their hospital was 11 months (range 1-122 months).<sup>46</sup> In another study Takayuki and Makoto observed the mean duration of symptoms before surgery was 30 (range 1-160 months).<sup>47</sup>

In this study, fistula in ano were low in 23 patients (76.66%) and high in 6 patients (20%) and extrasphincteric in 1 patient (3.33%), while in study of 54 patient Khalid observed fistula in ano, low in 45 patients (83.33%) and high in 8 patient (14.83%) and 1 patient (1.85%) had suprasphincteric, while no extrasphincteric fistula noted.<sup>43</sup>

In this series, the distribution of fistula in ano was as follows, intersphincteric in 12 patients (40%), transphincteric in 17 patients (56.66%) and extrasphincteric in 1 patient (3.33%), while in study of 160 patients Vasilevsky had observed the distribution of fistula as intersphincteric 41.9%,

transphincteric 52.1%, suprasphincteric 1.3%, extrasphincteric 0%.<sup>49</sup>

Continence is maintained partly by voluntary contraction of striated muscle fibers of the external sphincter and of the levator ani, and partly, by involuntary tone of the smooth muscle fibers of the internal sphincter.

Fistulotomy is simple, safe and effective for low anal fistulas, because at worst, only minimal amount of anal sphincter is incorporated by fistula. Fistulotomy for the intersphincteric fistula divides only part of the internal sphincter and does not scarify the external sphincter. In this series, 12 patients with intersphincteric fistula were operated by fistulotomy. There were no recurrence. The reason of relatively low recurrence, fistulas were intersphincteric and operative procedures was only fistulotomy. Results of this study was comparable with recurrence rate of intersphincteric fistula in study by Westerterp and Volkers and Masood.<sup>50,51</sup> In this series, the incidence of incontinence after fistulotomy was about 16.66%, which was comparable to incontinence rate after fistulotomy for intersphincteric fistula in the study by Takayuki (20.3%).<sup>46</sup>

Present study results showed that intersphincteric fistula with an intact anal sphincter can be treated satisfactory by technique that lay open the tract. Therefore fistulotomy appears to be the most effective means of eradicating a fistula track, and many patients will accept a minor degree of incontinence to be cured of a trouble some fistula with its associated discharge, recurrent sepsis, pruritis and disability.

In this study, there was incontinence in 3 patients (25%) out of 12 patients. Malouf had reported 40% patients incontinence after fistulectomy in his study that is higher than this study.<sup>52</sup> Fistulotomy is preferred over fistulectomy because in fistulectomy the entire fistulous track is excised via large wound with prolonged healing time and potential injury to sphincter in compromising continence when minimal anal sphincter is involved fistulectomy is also safe but has to be performed with great care.

In this study 6 patients with high transphincteric fistula treated by TSSF. Out of 6 patients 1 patient (16.66%) developed incontinence and that the preoperative incontinence score was altered. The reported incontinence after TSSF ranges from 2% to 66%.<sup>51,57-59</sup>

The technique of two stage seton fistulotomy has been associated with a high degree of incontinence especially if the internal opening is high.<sup>57</sup> However, direct comparison of use of cutting setons and TSSF to treated high fistula in ANO found no differences

between the two methods in either eradicating the sepsis or preventing incontinence.<sup>59</sup>

## Conclusion

For low and simple fistulas, effective treatment is by fistulectomy, when minimal anal sphincter is involved fistulectomy is also safe but has to be performed with great care. Incidence of impaired continence was lower in fistulotomy group of patients as well as recurrence rate is also lower than fistulectomy group. Those patients who had multiple abscess drainage or previous fistula repairs and patient with high fistula and infection avoiding

excessive sphincter cut in these patients would be wise it is better to use a two stage seton fistulotomy. This is involved the insertion of loose seton for abscess drainage or excising the secondary tract in complex high fistula followed by secondary fistulotomy. Options for surgical repair of postoperative incontinence disorder are limited, careful indications and minimal trauma to anal sphincter are mandatory in anal region.

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