

Fistulotomy Versus Fistulectomy As a Primary Treatment of Low Fistula in Ano

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ABSTRACT:

BACKGROUND:

Fistula in ano is common surgical condition that is treated by different surgical modalities.

OBJECTIVE:

Is to compare the outcome and complications of fistulotomy and fistulectomy as primary treatment of low fistula in ano.

PATIENTS AND METHODS:

A prospective randomized study was done on 76 patients of low fistulae in ano who were admitted to the surgical department at Alkindy teaching hospital from January 2009-January 2010.

Fistulotomy was done in 32 patients, and fistulectomy was done in 44 patients.

Patients were followed up post operatively for one year and the healing time was estimated in both groups and complication rate was recorded including bleeding, infection, incontinence and recurrence.

RESULTS:

Out of 76 patients included in this study, 65 patients (85.53%) were found intraoperatively to have intersphincteric fistulae and 11 patients (14.47%) were low transphincteric fistulae.

The operating time for fistulotomy (15-25 minutes) was shorter than that for fistulectomy (20-35 minutes).

The healing time was found to be shorter in fistulotomy group (26.38 days) than that of fistulectomy (38.64 days).

The complications which were recorded include bleeding occurred in only one out of 44 patients (2.27%) following fistulectomy, while no bleeding developed following fistulotomy.

Infection developed in one case out of 32 (3.12%) following fistulotomy and one case out of 44 (2.27%) following fistulectomy.

Two cases out of 32 (6.25%) developed minor incontinence following fistulotomy and 5 cases out of 44 (11.36%) following fistulectomy.

Recurrence developed in 2 cases out of 32 (6.25%) of fistulotomy and 3 cases out of 44 (6.82%) following fistulectomy. The recurrence in both groups developed within 4-6 weeks following surgery.

CONCLUSION:

Fistulotomy can be used as a primary treatment of low fistula in ano as the operating time is shorter and it takes shorter period of time for the wound to heal and the incidence of complications is comparable to that of fistulectomy.

KEYWORDS: low fistulae in ano , fistulotomy , fistulectomy.

INTRODUCTION:

Fistula in ano is a chronic abnormal communication usually lined by some degree of granulation tissue which runs outward from anorectal lumen" internal opening" to the external opening on the skin of the perineum or the buttock.⁽¹⁾

The vast majority of fistulae in ano are secondary to infection of the anal gland which present as perianal abscess which may spontaneously burst or inadequately drained⁽²⁾.

Fistulae in ano may be found in association with

specific diseases as crohn's disease, malignancy, radiation, trauma, foreign bodies or specific infections as tuberculosis, actinomycosis or Chlamydia⁽³⁾.

Fistulae in ano are classified according to the relationship of the tract to the sphincters, the definition of high or low fistulae describes the height of the tract as it traverses the sphincter muscles and not the position of the internal opening which is almost without exception at the dentate line.^(1,2)

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Others classify fistulae in ano as simple or complex, the complexity may be endowed by the level at which the primary tract crosses the sphincter, the presence of secondary extensions or difficulties faced in treatment.⁽¹⁾

Fistulae are classified based upon their relationship to the anal sphincter complex into ;intersphincteric fistulae (45%) do not cross the external sphincter,transsphincteric fistulae (40%) has primary tract that crosses both internal and external sphincter , suprasphincteric fistulae very rare and difficult to be distinguished from high transsphincteric fistulae and extrasphincteric fistulae runs without specific relation to the sphincters^(1,4,5).

Patient may present with persistent discharge from the internal and/or external openings which may be purulent or bloody and causes pruritus and discomfort in the surrounding skin.⁽⁶⁾

Pain which is increasing until temporary relief occurs when the pus discharges.⁽¹⁾

There is often but not invariably history of previous episodes of acute anorectal sepsis that settles incompletely spontaneously or with antibiotics or was surgically drained.

The key points to be determined during examination are the site of external opening,the site of internal opening ,the course of primary tract,the presence of secondary extensions and the presence of other conditions that complicating fistula.⁽¹⁾

The external opening can usually be seen as an elevation of granulation tissue, often active with purulent discharge.

The internal opening can be determined by using Goodsall's rule except for this rule if an anterior external opening is more than 3 cm from the anal margin such fistulae usually tract to the posterior midline⁽³⁾.

On digital rectal examination ,the internal opening may be felt as a point of induration or it may reveals a posterior or lateral induration indicating fistula deep in the post anal space or a horse shoe fistula.⁽⁷⁾

Anoscopy aids in identifying the internal opening in the anal canal.

Sigmoidoscopy or colonoscopy helps to exclude proximal internal opening, inflammatory bowel disease or neoplasia, if the diagnosis is suspected based on the history of recurrent fistulae, history suggestive of inflammatory bowel disease or examination revealed multiple fistulae.

The investigations that can be used for the diagnosis of fistula in ano include MRI which is the gold standard for fistula imaging, the great advantage is its ability to demonstrate the fistula track and presence of any secondary

extensions.^(1,8,9)Endoluminal ultrasound; especially with hydrogen peroxide can also be used to delineate the fistula. It is helpful to determine whether the fistula is straight forward or not.^(10,11)

Examination under anesthesia with gentle insertion of probes to define the tracts remain an important maneuver, despite increasing sophistications of preoperative and intra operative imaging.

Care must be taken not to create an additional internal opening by forcing the probe from a blind extension through the muscle and mucosa in the belief that there must be an opening in that position.⁽²⁾

Hydrogen peroxide or dye injected into external opening to produce a bubble or staining of the mucosa with dye at the internal opening are still useful maneuver's.

In fistulotomy, the tract must be layed open from its termination (external opening) to its source (internal opening) .it is the surest way of getting rid of a fistula. It is applied mainly to inter-sphincteric fistula and trans-sphincteric fistula involving less than 30% of external sphincter.⁽¹⁾

Fistulectomy involves coring out of fistula by either sharp dissection or diathermy cautery. It allows better definition of fistula anatomy than fistulotomy especially the level at which the tract crosses the sphincters and the presence of secondary extensions.⁽¹⁾ Both procedures are not free of complications such as bleeding ,infection, incontinence and recurrence of fistula.

In this study we try to compare the results of fistulotomy and fistulectomy including their complications.

PATIENTS AND METHODS:

A prospective randomized study was done on 76 patients of low fistulae in ano admitted to the surgical department at Al-kindy teaching hospital from January 2009-January 2010.

Patients who were excluded from the study include: patient more than 65 years, pregnant, diabetic patients, patients on steroids and patients with recurrent fistulae.

Data were collected from patients in a preforma and all patients had proctoscopy before surgery looking for any abnormalities of the anal canal (pus coming out from an internal opening or hypertrophied anal papillae).

Preoperative investigations include: estimation of hemoglobin, general urine examination, chest x-ray and ECG were done when indicated.MRI was done in 4 cases only where the tract of the fistula can not be clearly identified clinically preoperatively while the tract in other patients were clearly identified by clinical examination.

The cases were operated on randomly by two

different procedures: group I were patients who were treated by fistulotomy and group II by fistulectomy and they were followed up for one year.

Both groups were operated on under general anesthesia in lithotomy position, full examination done, injection of hydrogen peroxide was done to identify the internal opening then a grooved fistula probe was inserted from the external opening to identify the internal opening

Fistulotomy was done in 32 patients, the amount of the sphincter above and below the probe was noticed and the tract over the probe was laid open, while fistulectomy was performed in 44 cases where the whole fistula tract was excised around the probe by sharp dissection. Hemostasis was secured by pressure or diathermy and the wound was lightly packed. All fistula tracks were sent for histopathological study.

The patients treated postoperatively with oral antibiotics (Tetracycline cap. 250 mg 4 times daily)

for 3 days and intramuscular analgesia (tramadol)

single dose followed by oral analgesia (paracetamol tablets 500 mg three times daily) with twice daily hot sitz bath.

All the patients were questioned post operatively about incontinence for flatus and feces.

Rectal examination was performed in all patients post operatively to assess the resting and maximum squeezing pressures.

Leak of formed stool or persistent leak of liquid stool that occurred one week after surgery was regarded as major fecal incontinence, while episodic leak of liquid stool or persistent loss of control of flatus was regarded as minor incontinence.

All patients were followed up for 1 year after surgery at regular intervals of 4-6 weeks.

Statistical analysis was done by measurement of P. value in which a P. value of < 0.05 was regarded to be significant.

RESULTS:

Seventy six patients were operated upon for low fistula in ano. The incidence was found to be lower below the age of 20 years and after 55 years of age.(table I).

Table I: Age group distribution.

Age group(years)	Number of patients	Percentage %
10-19	6	07.89
20-29	21	27.63
30-39	38	50.00
40-49	9	11.84
50-59	1	01.32
≥60	1	01.32
Total	76	100.00

The majority of patients were males with male to female ratio of 15:4 (78.9%: 21.1%).

The clinical data collected from patients regarding duration of illness which was ranging from 8 months to 2 years (average 13 months).

The most common presenting symptom is a discharge from external opening in the perianal region in 72 patient and 4 patients presented with

perianal pain.

Thirty three patients had history of previous surgery for drainage of perianal abscess, 13 patients had history of perianal abscess that drained spontaneously and 30 patients had history of discharge or bleeding from the external opening. (Table II).

Table II: Clinical presentation of patients

Features in the history	No. of patients	%
Previous drainage of perianal abscess	33	43.42
Discharge from ext. opening	30	39.47
Perianal abscess drained spontaneously	13	17.11
Total	76	100.00

Regarding the types of fistulae, 65 patients (85.53%) were found during operation to be intersphincteric fistulae and 11 (14.47%) were low

transsphincteric fistulae.

The histological reports following fistulectomy showed a tract lined by granulation and fibrous

tissues leading to the skin. No granulomas, no malignancies were found in the specimen.

The operating time for fistulotomy was ranging from 15 to 25 with a mean time of 17.3 minutes while the operating time for fistulectomy was

ranging from 20 to 35 minutes with a mean time of 33 minutes . (P.value 0.008)

The healing time for fistulotomy was found to be between 21-36 days (mean 26.38 days), while the healing time for fistulectomy was 32-46 days with a mean of 38.64 days. (Table III). (P. value 0.0001).

Table III: Healing time of wounds for Fistulotomy and Fistulectomy groups.

Type of surgical procedure	No of patients	Percentage (%)	Healing time (days)
Fistulotomy	5	16	21
	8	25	24
	7	22	25
	10	31	30
	2	6	36
Fistulectomy	8	18	32
	12	27	36
	6	14	39
	5	11	41
	7	16	43
	2	5	44
	4	9	46

The complications that were recorded following fistulotomy and fistulectomy are shown in table IV includes:

Bleeding: No bleeding had been reported in patients who were operated by fistulotomy while following fistulectomy reactionary bleeding was reported in one patient out of 44 (2.27%).(P. value 0.9). The bleeding required examination under anesthesia and the bleeder was ligated with absorbable suture (vicryl 00).

Infection developed in one case out of 32 (3.12%) following fistulotomy and one case out of 44 (2.27%) following fistulectomy.

(P. value 0.9).They were treated by change dressing daily and by ceftriaxone 1gm daily intramuscular injection for three days followed by oral amoxiclav 625 mg 3 times daily combined

with oral metronidazole 500 mg 3 times daily for 7 days.

Minor incontinence developed in two patients out of 32 (6.25%) following fistulotomy, whereas 5 patients out of 44 (11.36%) who were treated by fistulectomy developed minor incontinence. (P. value 0.6). All the 7 patients who developed incontinence were reassured and incontinence disappeared after 5-8 weeks.

Recurrence developed in 2 out of 32 patients (6.25%) who were treated with fistulotomy.

While in 44 patients who were treated by fistulectomy, recurrence developed in 3 patients (6.82%).

In all of these cases, recurrence occurs at 4-6 weeks post operatively.

Table IV: Complications following fistulotomy and fistulectomy

Complication	Fistulotomy(n.32)		Fistulectomy(n.44)		P. value
	No. of patients	%	No. of patients	%	
Bleeding	0	0	1	2.27	0.9
Infection	1	3.12	1	2.27	0.9
Minor incontinence	2	6.25	5	11.36	0.6
Recurrence	2	6.25	3	6.82	0.8
Total	5	15.62	10	22.72	

DISCUSSION:

Low fistula in ano is a common surgical problem that we dealt with it by two different surgical procedures fistulotomy and fistulectomy.

The low reliance on radiological investigation is mainly because most fistulae are simple fistulae that their tract can be easily delineated by clinical examination so only 4 cases of fistulae in which they had previous history of surgical drainage of perianal abscess needs MRI for delineation of fistula tract.

The mean operating time of fistulotomy was statically significantly shorter than that of Fistulectomy (P. value 0.008).

In this study the healing time for patients treated with fistulotomy was significantly shorter than that for patients treated by fistulectomy. (P value 0.0001) as the mean healing time in our study was (26.38 days for fistulotomy vs. 38.64 days for fistulectomy) (P .value 0.0001) which is shorter than that of Kronborg who demonstrate a shorter healing times (34 days vs. 41 days) with fistulotomy compared to fistulectomy (P < 0.02) in 47 randomized patients⁽¹²⁾.

This difference is probably due to wide data base they selected including older age group, diabetic patients and patients with recurrent fistulae.

No bleeding was reported in patients treated with fistulotomy and one case out of 44 cases treated with fistulectomy (2.27%) developed bleeding.(P. value 0.9) this was due to wider dissection in fistulectomy while no cases were reported to have bleeding following fistulotomy or fistulectomy in the literature of Malik A.I. and Nelson R.L.⁽¹³⁾

Infection developed in one case of fistulotomy (3.12%) and one case of fistulectomy (2.27%) with no statistical differences. (P.value 0.9)

While no cases of post operative infection were reported in other literatures.^(13,14)

In this study minor incontinence developed in 2 out of 32 cases (6.25%) treated by fistulotomy, and 5 cases out of 44 who were treated by fistulectomy (1.14%) developed minor incontinence with no significant statistical difference .(P.value 0.6), where as one out of 24 cases treated by fistulotomy (4.16%) and 3 out of 21 cases of fistulectomy (14.28%) of Belmonte Montes developed minor incontinence ⁽¹⁵⁾ .Eight out of 18 cases (44.44%) had post operative minor incontinence following fistulotomy in a study by Westerterp M .⁽¹⁶⁾

No cases of incontinence were reported in the study of Qureshi et al⁽¹⁴⁾, while Kronborg demonstrated no significant differences between both groups regarding incontinence.⁽¹²⁾ This wide range of differences in different studies may be due to inclusion criteria a they include old age group

diabetic patients and recurrent fistulae which were excluded from our study.

Preoperative proctoscopy , delineation of the fistula intraoperatively by injection hydrogen peroxide solution into the fistula tract , gentle probing the fistula and avoidance of creating a false tract and proper assessment of the amount of the sphincter above and below the fistula during surgery are the mean factors make our results better than other studies.

The recurrence rate in our study is statistically comparable to results of Malik and Nelson as recurrence occur 2 cases out of 32(6.25%) in fistulotomy treated group , while 3 out of 44 cases(6.81%) in fistulectomy group developed recurrence⁽¹³⁾.(P. value 0.8) .

kronborg reported recurrence in 3 out of 24(12.5%) cases treated by fistulotomy and in 2 out of 21 cases (9.52) of fistulectomy with no significant differences regarding recurrence rate in both groups as well.⁽¹²⁾, Hongo Y., Kurokawa A., Nishi Y. reported recurrence in 4 out of 319 cases (1.25%) treated by fistulotomy¹⁷, whereas Qureshi et al reported recurrence in 2 cases out of 45(4.44%) following fistulotomy and no recurrence following fistulectomy with no significant differences⁽¹⁴⁾ , Kronborg show recurrence rate of (3/24 vs 2/21) for fistulotomy vs fistulectomy groups¹².

CONCLUSION:

Fistulotomy can be used as a primary treatment of low fistula in ano as the operating time is shorter and it take shorter period of time for wound to heal and the incidence of complications is comparable to that of fistulectomy.

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