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MODIFIED LAY OPEN FISTULOTOMY (INCISION, CURETTAGE, PARTIAL LATERAL WALL EXCISION AND MARSUPIALIZATION) V/S TOTAL PROPER FISTULECTECTOMY– (A PROSPECTIVE RANDOMIZED CLINICAL TRIAL OF 150 PATIENTS WITH A COMPLETE 2 YEARS FOLLOWS UP)

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ABSTRACT

Fistula in Ano has been treated with many procedures in clinical practice from a long time. Recent studies show that fistulotomy with marsupialization can reduce operating time, healing time, bleeding and infection etc. A randomized clinical trial was conducted in Mahatma Gandhi hospital to compare the efficacy of fistulotomy v/s fistulectomy in treatment of low fistula in Ano. Patients were randomized in two groups, namely group one for fistulotomy and group two for fistulectomy with each group had 75 pts. Both groups were comparable for age, sex ration, duration of symptoms, type of fistula etc. Operating time was statistically not significant in both groups. The mean healing time was statistically significantly higher in group two. In our study we found that recurrence was major factor in group one fistulotomy patients. On behalf of our study we concluded that the most important criteria for fistulotomy are careful selection of patient. It also depends on the experience of surgeon and technique adopted by the surgeon. The most likely cause of recurrence was failure to identify the secondary tract and excise the fistulous tract in total on fistulotomy.

Keywords: *Fistula in Ano, Fistulotomy, Fistulectomy, Recurrence*

INTRODUCTION

Fistula in Ano or Anal fistula is a chronic abnormal communication between the epithelized surface of the anal canal and usually the perianal skin (Parks *et al.*, 1976). Anal fistula originates from anal glands, which are located between the internal and external anal sphincter and drains into the anal canal (Williams, 2004). Acute infection of this anal crypt glands leads to anorectal abscess and fistula in Ano, represents the chronic form of this infection (Bhatti *et al.*, 2011; Kodner *et al.*, 1994).

Symptoms greatly affect the quality of life very much from minor discomfort of patient to severe sepsis of the patients. Reference to the fistula in Ano date to antiquity. A historical reference indicates that Louis XIV was treated for anal fistula in 18th century. Salmon established a hospital in London (St Mark's) devoted to the treated of fistula (Corman, 2005).

In 1976, Parks refined the classification system that is still wide spread used but despite 2000 years of experience, wording of Lockhart and Mummery had rightly pictured the surgeon mentality that "mostly reputations are lost in treatment of fistula than in any other operation."

Fistulas are classified on Park's classification (Parks *et al.*, 1976).

1. Inter-sphincteric and trans-sphincteric, supra-sphincteric and extra-sphincteric
2. Low and high
3. Simple and complex

The true prevalence of fistula in Ano is unknown. The incidence of fistula in Ano in developing countries for anal abscess ranges from 26-38% (Vasilevsky and Gordon, 2007; Ramanujam *et al.*, 1983).

Nearly all patients of fistula in Ano are result of anorectal abscess. This abscess begins with infection in one of the anal gland that may stay in space between inter-sphincteric, may spread down to perianal skin or may extend through the external anal sphincter (Vasilevsky, 1992).

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The key point during examination is to identify the exact location of both internal opening by per rectum examination and external opening by infection or palpation method (Kuypres, 1982).

The internal opening can be determined by using Goodsall's rule exception for this rule, if an anterior external opening is >3 cm from anal margin such tracts are in posterior midline. Proctoscopy can be used to identify the internal opening.

MRI can be used to delineate the complex anatomy and to see the secondary extension of fistulous tracts (Peter, 2008; Gordon *et al.*, 2004; Lunniss *et al.*, 1994).

Endoluminal USG with hydrogen-peroxide can be used to delineate the tracts (Lindsey *et al.*, 2002; Ratto *et al.*, 2000).

During surgery H₂O₂ or dye injected into the external opening to produce a bubble or staining of the mucosa with dye at internal opening is still useful maneuvers.

In one group we performed modified lay open technique in which we opened up fistula tract from its terminal part (external opening) to its source (internal opening), curetted, partial lateral was excised and marsupialization done to getting rid of fistula (Peter, 2008). It is mainly applied to inter-sphincteric and trans-sphincteric type of fistulas. In another group we performed fistulectomy using some energy source. 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 (Peter, 2008).

In this study we try to compare the result of fistulotomy and fistulectomy including their complication.

MATERIALS AND METHODS

A prospective randomized study was done in between April 2012 to March 2013 on 150 patients of low fistula in Ano admitted in the Department of General Surgery, Mahatma Gandhi Medical College, Jaipur. The patient kept in follow up, up to March 2015 to see the complication like recurrence.

All fistulas with any age, any gender was included in our study, only high fistula, previously carcinoma, irradiated or severely sick patient were excluded because follow up of these patient were not possible.

All routine workup was done preoperatively. Cases were operated randomly by two different procedures.

In group I patient were treated by fistulotomy and group II by fistulectomy and they were follow up for two years.

Both groups were operated under spinal anaesthesia, lithotomy position.

After P&D, tracts were confirmed.

In modified lay open technique 75 patients were operated. In this method with the help of fistulous probe, the tract was incised, open, curette, partial lateral was excised and marsupialization of the tract was done.

In another 75 patients proper fistulectomy was done by diathermy. In the fistulectomy, a keyhole skin incision was made over the fistulous tract and encircled the external opening. The incision was deepened through the subcutaneous tissue, and the tract was removed from surrounding tissues. Towards the anal verge, fibers of the anal sphincters overlying the tract were divided. While the tract was being removed, attention was paid to identifying secondary tracts, if any. Haemostasis was achieved.

Proper hemostasis was achieved in both groups. All fistulous tracts were sent for histopathological examination and routine same post operative analgesics were given in patients of both groups.

All patients were check for incontinence, pain perception, and soakage post operatively. All patients were kept in follow for two years at 1 month interval at initial six months than two to three monthly up to two years.

RESULTS AND DISCUSSION

Results

150 patients were operated for low fistula in Ano.

Age incidence was found mainly in between 30 years to 60 years of age.

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Table 1: Age group distribution

| Age groups (years) | Number of patients | Percentage % |
|--------------------|--------------------|--------------|
| 10-19 | 8 | 05.33 |
| 20-29 | 29 | 19.33 |
| 30-39 | 37 | 24.66 |
| 40-49 | 32 | 21.33 |
| 50-59 | 31 | 20.66 |
| 60-69 | 13 | 08.66 |
| Total | 150 | 100 |

Majority of patient was males with male to female ratio was 15:4 (78% and 21%)

Main presenting symptoms in our study was discharge from external opening; second presenting symptom was swelling and excoriation at external opening of tract site.

35 patients in our study had history of previous surgery that was abscess drained by I&D.

17 patients had previously operated for fistulous tract surgery some sort of Kharsutra, fibrin glue, improper fistulous tract excision.

Table 2: Clinical features of patients

| Clinical features | No of patients | % |
|--|----------------|-------|
| Discharge from external opening | 74 | 49.33 |
| Indurations or swelling at perianal skin | 24 | 16 |
| History of previous surgery that was abscess drained by I&D. | 35 | 23.33 |
| previously operated for fistulous tract surgery | 17 | 11.33 |
| Total | | |

The biopsy reports of patient were seen. No one showed any malignancy or any other abnormalities.

Regarding type of fistula, 102 patients were having inter-sphincteric type, rest were trans-sphincteric type. Operating time for fistulotomy was ranging from 20 minutes to 35 minutes with a mean time of 31.4 minutes while operating time for fistulectomy was 10 minutes to 35 minutes with mean time was 29.7 minutes. Healing time for fistulotomy was found to be 21 days to 45 days and for fistulectomy it was 21 days to 90 days.

Complications that were occurs following in both groups are shown in tables are as-

Table 3: Complication table

| Group 1 FISTULOTOMY | | | GROUP 2 FISTULECTOMY | | |
|---------------------|--------------------|-------|----------------------|--------------------|------|
| Complication | Number of patients | % | Complication | Number of patients | % |
| Bleeding | 0 | 0 | Bleeding | 0 | 0 |
| Infection | 8 | 10.66 | Infection | 1 | 1.33 |
| Minor incontinence | 1 | 1.33 | Minor incontinence | 3 | 4 |
| Recurrence | 8 | 10.66 | Recurrence | 1 | 1.33 |
| total | 17 | | total | 14 | |

Bleeding – No bleeding was occurring in any of case of fistulotomy or fistulectomy. This may be due to better than best energy sources are available in our hospital from long time. So this bleeding problem was not encountered in any of our case.

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Infection – Infection was seen in 8 patients out of 75 following fistulotomy and 1 patient out of 75 patients of fistulectomy. This infection in fistulectomy groups was treated only by daily dressing and some sort of higher antibiotic but infection of group first was due to recurrence which needs reevaluation. Minor incontinence was developed in one patient of fistulotomy and 3 patient of fistulectomy. All 4 patients regain continence after 3 month of surgery without any intervention.

Recurrence – Recurrence was the major issues in our study because 8 patients develop recurrence in fistulotomy group and one patient develop recurrence in fistulectomy group. Patients of both groups develop recurrence after 4-6 weeks of surgery.

Discussion

By two different methods of surgery for fistula in Ano, we conducted this study to compare the efficacy in term of operative time, healing time, bleeding, infection, and incontinence and recurrence rate in two groups of patients by randomized controlled study.

The operative time of fistulotomy was not statistically significantly shorter than that of fistulectomy in our study. Mean operating time was 31.4 minutes for fistulotomy and 29.7 minutes for fistulectomy, which were not statistically significant (p. value 0.0007). Our these results favors' the clinical trial of (Pescatori *et al.*, 2006; Jain *et al.*, 2012).

In view of healing time for patient on fistulotomy was shorter than fistulectomy as the mean healing time in our study was 27.9 days for fistulotomy and 41 days for fistulectomy which was comparable of Kronbarg *et al.*, (1985) who demonstrate a shorter healing time (34 days v/s 41 days) with fistulotomy compare to fistulectomy in 47 randomized trial (Kronborg, 1985).

In view of bleeding we do not encountered any post operative bleeding problem. Nowadays bleeding problem does not occur due to availability of good energy sources everywhere. Our results favors' the literature of Malik and Nelson (2008).

Infection develops in 8 patients of our fistulotomy group and one case of fistulectomy. Our this result was completely differ from other studies in literature (Malik and Nelson, 2008; Qureshi *et al.*, 2002). Probably this was due to that in fistulotomy procedure we were not able to identified the secondary tract completely on incision of fistulous tract which continuously drains in major tract of fistula in Ano.

Recurrence was major factor in our study that stand question in choosing the better method of fistula in Ano surgery. We showed that recurrence were in 8 patients out of 75 on fistulotomy (10.66%) and 1 patient in fistulectomy procedures (1.33%) during follow up to 2 years.

In randomized controlled trial by Kronborg (1995) the recurrence rate was 12.5% in fistulotomy & 9.52% in fistulectomy which was in some favors our study.

In study of Prakash *et al.*, (1997) shows 3 cases of recurrence out of 125 cases.

In study of Poon *et al.*, (2008)– 13.3% recurrence rate out of 17 cases.

Recurrence is major issue in fistula surgery and this recurrence is mainly due to inadequate excision of fistula tract which is more prone to occur in fistulotomy surgery in compare to fistulectomy because fistulectomy involves coring out of fistula by either sharp dissection or diathermy than fistulotomy. Fistulectomy allows better definition of fistula anatomy than fistulotomy especially at the level at which the tract crosses the sphincters and the presence of secondary extensions (Peter, 2008).

Conclusion

The modified lay open technique can be used as primary treatment of low fistula in Ano as it takes shorter healing time, shorter operating time, shorter hospital stay but most important criteria in fistulotomy is careful selection of patient because most important disaster of fistula surgery is recurrence which should not be occurred anyhow.

In our study we shows that operating time, healing time, and anal incontinence all had same incidences in both groups but recurrence was less in fistulectomy patients. Probably this occurs because of during fistulectomy the operating surgeon is able to see the other extra secondary tract during surgery.

So primarily fistulotomy is better alternative to fistula surgery in considering the other benefits to the patients but not in view of recurrence. However it need more prospective and randomized controlled trials to reach a conclusion at this stage as there is minimal literature and studies on this topic.

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