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Analysis of results of primary closure in fistula in ANO

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Abstract---Aim: Prospective analysis of results of primary closure in fistula in ano in terms of (a) Immediate- Bleeding, perianal haematoma, pain, suture line dehiscence and healing period. (b) Later - Incontinence & recurrence rate and Patient's compliance & feasibility of technique in NSCBMC Jabalpur. Methods: Prospective study was conducted in Department of Surgery, NSCB Medical College, Jabalpur between Aug. 2012 to Sept. 2013. Total 60 patients were taken and divided in two groups, group-A (30 patients) taken as case study in which primary closure was done and group-B (30 patients) taken as control group in which open fistulectomy was done. Results: Majority of patients were 31 to 60 years (80%). More number of males than females. (M=93.3%, F=6.7%). Perianal Discharge (90%), Pain (56.7%) and Swelling (33.3%) were the main complaints. Fistula-in-ano with a single opening (83.3%) was the commonest occurrence and posterior opening (70%) situation was more common. Bleeding was seen in open method (group-B=30%) whereas none of the patients shows bleeding in primary closure technique (group-A). Perianal haematoma was more seen in open method (group-B=20%) compared to primary closure method (group-A=6.6%). In open method (upto 1 month, VAS Score= 1.2) comparatively higher pain was observed than primary closure method (upto 2 weeks, VAS Score=1). In primary

closure method (group-A) most of the patients wounds completely healed at less than 2 weeks (83.3%) compared to open method in which most of wounds healed at 2-3 weeks (46.7%). None of the patients having complications of recurrence and incontinence in both groups. Mean post operative stay in primary closure (group-A) was 5.4 ± 1.5 days and in open method (group-B) 12.8 ± 2.9 days. Discussion: Early discharge from the hospital and early return to normal activity was seen in primary closure technique as healing of the wound was faster. Primary closure method of fistula is safe, feasible and more effective in the management of fistula in ano compare to open method.

Keywords---Fistula in ano, Primary closure, Fistulectomy.

Introduction

Fistula-in-ano, one of the most frequent anorectal pathologies, has a wide spectrum of clinical presentations ranging from an easily treatable, simple, and superficial fistula to treatment-refractory, very complex fistula systems involving a significant portion of the sphincter complex. According to Park's Classification it is intersphincteric, trans-sphincteric, supra-sphincteric or extra-sphincteric¹².

A fistula-in-ano is a hollow tract lined with granulation tissue, connecting a primary opening inside the anal canal to a secondary opening in the perianal skin. Secondary tracts may be multiple, bilateral also- making it horseshoe fistula in ano and can extend from the same primary opening.

Fistula-in-ano is a difficult problem that physicians have struggled with for centuries². An anal fistula (Fistula -in-ano) is an infected connection between the skin and the anal canal. It is a granulomatous tract, single or multiple external opening, which connects perianal skin to the epithelium of anal canal or rectum¹⁴.

Anal fistula occurs most commonly when the anal glands, which reside in the intersphincteric plane, become occluded and infected, which results in a cryptoglandular abscess¹². Following surgical or spontaneous inadequate drainage in the perianal skin, occasionally a granulation tissue-lined tract is left behind, causing recurrent symptoms. Other fistulas develop secondary to trauma, Crohn's disease, carcinoma, radiation therapy, actinomycoses, tuberculosis, and chlamydial infections. Previously The treatment for the fistula was mostly surgical and includes a multitude of technical options.

The presence of acute or chronic anal fistula can be distressing for patients and cause reduced quality of life¹⁰. Success rates reported in the literature vary widely none of the approaches has been proven to be superior for all the procedure. Because of the inherent differences of the underlying fistulas and their etiologies. Management of fistula-in-ano is still challenging, the reason is, the surgeons must Aim to closure of anal fistula completely without disturbing sphincter function and preventing anal continence^{4/1}. The major objectives of any treatment

option for fistula-in-ano are therefore

- (1) the successful elimination of current and recurrent disease.
- (2) the preservation of sphincter function.

Keeping in view the above-mentioned factors we performed primary closure in fistula in ano. This technique is safe, feasible and equally effective in the management of fistula in ano compared to open method of fistulectomy. Post operative pain is much less with early return to normal activity, early discharge from the hospital, healing of wound is faster and has decreased morbidity.

Commonly done surgical procedures for fistula-in-ano are Fistulectomy, Fistulotomy, fibrin glue, advancement flap, fistula plug, seton insertion, over-the-scope-clip (OTSC), Ligation of inter-sphincteric fistula tract (LIFT), filac laser, Stem cell, Trans anal opening of inter-sphincteric space (TROPIS), Video assisted Anal fistula treatment (VAAFT)⁷.

The most common approaches, until the recent, consisted of Park's fistulotomy, insertion of a seton, two-stage-fistulotomy, fistulectomy (excision of whole of the tract), primary fistulectomy with occlusion of the internal ostium, fistulotomy with primary repair of the sphincter, endorectal advancement flaps, anocutaneous advancement flap, repair of fistula using fibrin adhesive glue and re-routing the fistula, injection of fibrin glue, closure of the primary opening with an endorectal advancement flap (ERAF) But still controversial introduction of the collagen plug LIFT, and VAAFT technique. Within past decade treatment of fistula in ano with surgical approaches like Sphincter preserving surgery have shown good improvement for the result. These Are including loose seton placement⁵, fibrin glue^{3,8,16} And anal fistula plug Insertion⁹. Anal fistula plug is a bio absorbable xenograft which is made up of lyophilized Porcine intestinal sub-mucosa⁶. Few new products are also available for treatment of fistula in ano which are Based on anal fistula plug technique such as synthetic bio absorbable anal fistula Plug which is composed of a copolymer, from polyglycolic acid trimethylene Carbonate which is slowly absorbed by the body¹⁵.

Material and Methods

This prospective study, analysis of results of primary closure in fistula in ano was conducted in the Department of Surgery, NSCB Medical College, Jabalpur from Aug. 2012 to Sept. 2013.

Selection Criteria

In our study we included all the patients of fistula in ano of all types (primary, simple, complex, recurrent, high, low, and horse-shoe) of any age irrespective of sex who presented themselves in OPD or casualty having cardinal symptoms of swelling, pain, perianal discharge, bleeding, diarrhea, skin excoriation and external opening except patient who is unfit for surgery (ASA Grade IV)

Pre-Op Work-Up

All the patients with diagnosed fistula in ano after digital per rectal examination

and Proctoscopy and confirmed by fistulogram using contrast media, patient was labelled as Low fistula and High fistula. Patients submitted for routine investigations like complete blood count, differential leucocyte count, blood urea, serum creatinine, serum electrolytes, blood glucose, blood group, chest x-ray and electrocardiogram. Pre-anaesthetic check-up was done for surgery. Night before surgery bowel preparation was done with the help of rectal enema and if required anxiolytics. Proper consent taken and explained about the procedure. Patient planned for surgery and divided in two groups, group-A(30 patients) taken as case study in which primary closure was done and group-B(30 patients) taken as control group in which open fistulectomy was done.

Surgical Technique

Patient was kept in lithotomy position under suitable anaesthesia (spinal, saddle/ GA). After manual dilatation of anal canal fistulous tract was cannulated with 5 Fr feeding tube and Methylene blue is injected in to the fistula opening to delineate the fistula tract. And internal opening is detected. Skin surrounding the external opening is incised using skin knife. Then the whole of fistulous tract is excised with the help of monopolar cautery. If required part of the external sphincter sharply cut. First mucosa to mucosa repaired with continuous suture and after proper delineation of sphincter fiber it is repaired with interrupted suture. Cavity is examined and obliterate the cavity without tension with suture (vicryl 2-0 RB) in layers after complete haemostasis. Skin to skin repaired interruptedly with vicryl 2-0 RB with corrugated drain in-situ. Per anal betadine+ xylocaine jelly-soaked pack is kept for atleast 12 hr. Tract is sent for histopathological examination. Corrugated drain will be removed after 3-5days depending upon the soakage.

Post Operative Treatment and Care

In post-operative days patient will be supported on IV fluids, antibiotics, analgesics, laxatives, and local anti-septic ointment like betadine + metrogylP ointment. Patient was monitored for bleeding and pain in immediate post-op. Same evening oral liquid with anxiolytic started and from next day sitz bath, dressing and full diet allowed. Patient was discharged after 72 hrs.

Follow Up

The follow-up was done from 0,1st, 2nd, 3rd week & 1, 3 &6th month for assessment of bleeding, perianal haematoma, pain, suture line dehiscence and healing period, sepsis, incontinence & recurrence using patient's histories, physical examination, proctoscopy. Statistical analysis was done.

Results

Table 1: Distribution of both groups according to age

≤ 10	0	0.0	0	0.0
11-20	2	6.7	1	3.3
21-30	4	13.3	5	16.7
31-40	9	30.0	11	36.7
41-50	8	26.7	4	13.3
51-60	7	23.3	8	26.7
> 60	0	0.0	1	3.3
Mean	40.6 ± 11 years		42.2 ± 12.4	
Range	19-60 years		18- 70	
P value	0.5991		Not significant	

In present study majority of patients were 31 to 60 years (80%).

Table 2: Sex wise distribution of both groups

Sex	Group A	%	Group B	%
Male	28	93.3	27	90
Female	2	6.7	3	10
Total	30	100	30	100

More number of males than females (M=93.3%, F=6.7%).

Table 3: Patients according to situation of external openings

Situation of external opening	Group A	%	Group B	%
Anterior	9	30	11	36.66
Posterior	21	70	19	63.33

Fistula-in-ano with a single opening (83.3%) was the commonest occurrence and posterior opening (70%) situation was more common. In Prakash et al study, 39 cases have posterior fistulas, 13 cases have anterior fistulas.

Table 4: Distribution of cases according to healing period in post operative days

Healing Period	Group A	%	Group B	%
< 2 wks	25	83.3	7	23.3
2_3 wks	3	10.0	14	46.7
> 4 wks	2	6.7	9	30.0

In primary closure method (group-A) most of the patients wounds completely healed at less than 2 weeks(83.3%) compared to open method in which most of wounds healed at 2-3 weeks(46.7%). None of the patients having complications of recurrence and incontinence in both groups.

Table 5: Distribution of patient according to pain score assessed by visual analogue scale (1 – 10)
VAS Score mean

VAS Score mean	Group A	Group B
0 week	3.8	6.4
1 week	1.9	4
2 weeks	1	2.5
3 weeks	0	1.6
1 month	0	1.2
3 months	0	0
6 months	0	0

In open method(upto 1 month, VAS Score= 1.2) comparatively higher pain was observed than primary closure method(upto 2 weeks, VAS Score=1).

Table 6: Comparative hospital stay duration

Hospital stays	Group A	Group B
≤ 5 days	17(56.7%)	0(0%)
6-10	13(43.3%)	8(26.7%)
11-15	0(0%)	16(53.3%)
16-20	0(0%)	6(20%)

Mean post operative stay in primary closure (group-A) was 5.4±1.5 days and in open method (group-B) 12.8±2.9 days in open fistulectomy.

Discussion

Fistula-in-ano, one of the most frequent anorectal conditions. A fistula-in-ano is a hollow tract lined with granulation tissue, connecting a primary opening inside the anal canal to a secondary opening in the perianal skin. Commonly done surgical procedures for fistula-in-ano are Fistulectomy, Fistulotomy, fibrin glue, advancement flap, fistula plug, seton insertion, over-the-scope-clip (OTSC), Ligation of inter-sphincteric fistula tract (LIFT), filac laser, Stem cell, Trans anal opening of inter-sphincteric space (TROPIS), Video assisted Anal fistula treatment (VAAFT)⁵.

In our study majority of patients were in the age group of 31 to 60 years (80%) with a greater number of males than females (M=93.3%, F=6.7%). In Shahbaz et al (50 cases), ratio of males and females is 4:1. In Sushila G et al study also the peak age incidence was 21-40 years with a male:female ratio of 4:1¹³. In another study data were available for 146 patients (47 women), with a median age of 44 years (range 18-82 years) and a median continence score of 0 (range 0-23)¹⁰.

Fistula-in-ano with a single opening (83.3%) was the commonest occurrence and posterior opening (70%) situation was more common. In Prakash et al study, 39 cases have posterior fistulas, 13 cases have anterior fistulas. In present study, in primary closure method (group-A) most of the patients wounds completely healed at less than 2 weeks (83.3%) compared to open method in which most of wounds healed at 2-3 weeks (46.7%). In our study none of the patients having complications of recurrence and incontinence in both groups.

In open method (upto 1 month, VAS Score= 1.2) comparatively higher pain was observed than primary closure method (upto 2 weeks, VAS Score=1). In Damor et al study, in primary closure group mean pain score on first postoperative day is 2.77⁴. In our study mean post operative stay in primary closure (group-A) was 5.4±1.5 days and in open method (group-B) was 12.8±2.9 days. InprakashS et al study, in open fistulectomy mean hospital stay was 5.2 days⁵. In Singh et al study, mean hospital stay was 8 days¹¹.

Conclusion

Decreased morbidity in primary closure method compare to open method. Early discharge from the hospital and early return to normal activity was seen in primary closure technique as healing of the wound was faster. None of the patients having complications of recurrence and incontinence in both groups. Primary closure method of fistula is safe, feasible and more effective in the management of fistula in ano compare to open method. Primary closure technique is easy and cheap. No special training and no special instrumentations are required in primary closure technique.

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