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RESEARCH ARTICLE

COMPLEX FISTULAS IN ANO: SETON PLACEMENT; AN EFFECTIVE SOLUTION TO TRICKY ENIGMA SHORT

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Abstract

Fistulas in ano is an abnormal connection between anal canal and perianal skin. There are two subtypes occur on the basis of course of fistulous tract and involvement of external anal sphincter; simple and complex. Complex fistula is challenging to manage due to risk of recurrence and fecal incontinence even in experienced hands. A myriad of surgical procedures are available in armamentarium of surgeon for ages and placement of seton is the one of answer to this complex clinical entity. Seton placement preserve the fecal continence and prevent recurrence. We here presenting our experience of managing 116 cases with seton placement over three years duration at a tertiary care centre. In our series recurrence rate was around 10% without any fecal incontinence. Seton placement is a safe option for managing complex fistula in Ano.

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Introduction:-

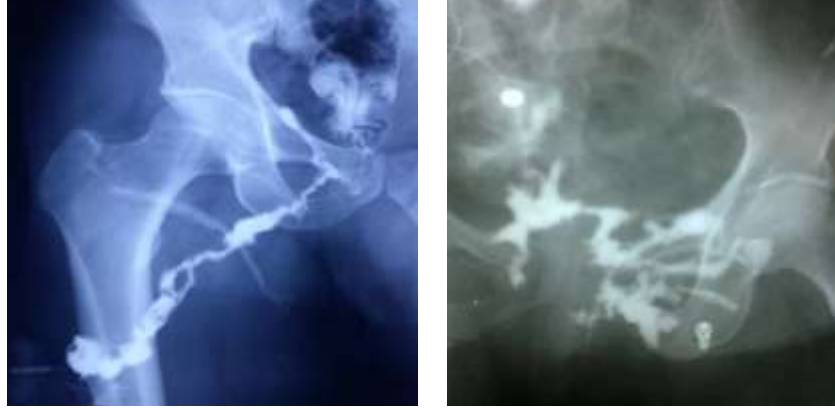
Fistulas in ano is known to plague human kind since ages as its description including treatment by seton placement has been narrated by Hippocrates, dating back 400 BC [1].

Majority of fistulas commence with infection of anal canal gland as crypto glandular abscess which spreads along the inter sphincteric plane between external and internal sphincter and final outcome is formation of abscess of different kinds like perianal, ischioirectal, inter sphincteric and supra levator. About one third of patients with such abscess develop fistula in Ano. These glands are located at the dentate line level so the internal opening lies at this line even if the fistulous tract extends above the anorectal ring. Sometime rupture of the abscess can result internal opening above the Dentate line as in patients with Crohns disease and tuberculosis [2,3].

Many classification systems have been evolved on the basis of course of tract and it's relation to anal sphincter complex as intersphincteric, transsphincteric, supra sphincteric, and extra sphincteric as described by Park [4]

Diagnosis of the fistula is based on clinical findings however a good fistulogram and MRI delineates fistulous tract and pave the road map for surgical procedure in complex cases (Pic 1 a & b).

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(Pic 1 a &b:- Fistulogram : Extent of Complex Fistula)

Examination under anaesthesia also plays significant role in assessing and planning the extent of surgery. Goal of surgery to maintain continence by taking care of sphincter complex, and to prevent recurrence by excision of adequate tissue, in time ahead. Simple fistula often does not pose a therapeutic challenge as fistulotomy which is lying open of the tract from external to internal opening yields a high success rate up to 95% [5].

In contrast, managing a complex fistula is like a double-edged sword as sphincter injury may lead to incontinence while a conservative approach by preserving EAS bulk risks for recurrence.

Here we are presenting our experience of managing 116 patients having complex fistula in the Anus with seton placement.

Methods:-

In our center, a total of 158 cases of confirmed fistula in the Anus were managed over a three-year duration. Being a tertiary care hospital with a surgical gastroenterology center, most of these cases were referred from peripheral hospitals. Of these cases, 42 patients have simple fistulas and the rest 116 cases were complex in nature (Table 1).

Complex Fistula (Sub Types)		
(a)	Low trans sphincteric (major external sphincter involvement)	13
(b)	High trans sphincteric	27
(c)	Fistulas with Deep seated abscess	23
(d)	Multiple internal opening	08
(e)	Multiple external opening	14
(f)	Multiple internal and external openings	04
(f)	Recurrent fistula in ano	24
(g)	Associated with systemic diseases (IBD/tuberculosis)	03
	Total	116

Table 1:- Sub types of complex fistula

42 cases of complex fistulas were evaluated with only a conventional fistulogram and 74 cases were evaluated with MRI pelvis prior to the surgery. All cases of recurrent fistulas, fistulas with multiple openings and deep-seated abscess had undergone MRI evaluation to delineate the nature and extent of the fistula / abscess and relation to the sphincter complex.

After preoperative fitness work-up, consent was obtained and then the patient was subjected to Examination Under Anaesthesia (EUA) under spinal anaesthesia/saddle block in lithotomy position. A thorough local examination (comprising digital rectal assessment and proctoscopy) followed by delineation of internal opening by injecting methylene blue dye or mixture of povidone iodine with hydrogen peroxide by infant feeding tube advanced through external opening. (Fig 2a). This tract is further probed with a metal malleable probe which is also used for guiding the excision and seton placement of the fistulous tract (Fig 2b).



(Fig 2 a&b:- Mixture of Betadine and Hydrogen Peroxide pooled in to anoectum revealing internal opening ; Metal Probe Traversing through Externo internal opening (Blue Stars*)

Following this mapping of tract,subcutaneous part of tract excised and submitted for histopathological examination. (Fig 3 a, b, c& d:-)



(Fig 3 a, b, c &d:- Subcutaneous Portion Tract probed, excised specimen & Final Scars)

Placement of two setons for sphincter part placed, one cutting seton (which gradually cut through the sphincter) and another loose seton (drainage seton) for keeping the track open and helps in pulling the fresh silk thread during change of seton. A wide external wound was made to prevent a premature closure of skin and adequate drainage.

Patient with internal opening at the level dentate line and the abscess cavity lying above the internal opening, this cavity is made to communicate for adequate drainage by placing a feeding tube/foley's catheter based on surgeon's discretion through a separate stab wound and fixed with skin with silk 1-0. (Fig 4a)in addition to excision and seton placement of fistulous tract.Irrigation of cavity by mixture of hydrogen peroxide betadine and normal saline (20 ml)

twice daily from the first post op day to flush out the residual pus, necrotic tissue from the cavity (Fig 4b). This irrigation tube usually removed after post operative day 7.



(Fig 4 a & b: Seton & Infant Feeding Tube In Abscess Cavity star & arrow head ; 4 b Post Op irrigation of Abscess Cavity)

All operated patients scheduled for weekly OPD visit with examination of wound and change of the cutting seton under local anaesthesia (infiltration of 2-5 ml of 2% lignocaine) if found loose. Once the seton got cut through on its own patient was managed only with sitz bath and monthly review till the wound heals

Post op follow using telephonic enquiry/ messaging were for 1 year. All the patients were advised to review / communicate in the same center in case of recurrence.

Results:-

Out of 116 patients of complex fistulas 102 were on regular follow up for one year and 14 patients lost to follow up.

None of the patients developed any form of fecal incontinence once the fistula is healed after removal of seton.

Occasional incontinence of the flatus which was transient was occurred in four patients who had a broad fistulous communication and large post-operative external wound however recovered completely once the wound healed.

Three specimens had granulomatous lesions suggestive of tubercular in nature and managed with 06 months Anti tubercular Treatment (ATT).

In our series 22 patients had deep seated abscess cavity situated above the internal opening communicating to fistulas. All these cases were managed with placement of an irrigation tube deep in the abscess cavity and daily irrigation after the surgery. There was complete healing of abscess cavity occurred once the external wound healed. Overall number of seton changes required and the time taken for complete healing of the wound is given below as per table 2.

	Number of cases	Average hospital stay in days	Average time for complete healing in days	Recurrence
Cases required less than 3 seton changes	04	8 days	23	nil
Cases required 3-5 seton changes	83	8 days	36	6
Cases required > 5 seton changes	29	8 days	52	5

Table 2:- Number of seton changed and Time taken for healing

Recurrence of fistula noticed in 11 patients and most of these cases presented with in first three months (7 cases) of index surgery. All those cases who had recurrence had either a single tract recurrence or a low fistula. They were

managed in same way as the initial management with excision of the tract and seton placement. These cases were followed up for 01 year and no recurrence was reported among these patients.

Discussion:-

Despite the enormous leap in surgical knowledge and experience we still often struggle to find the solution to manage this challenging problem of fistula in ano, whether it is a simple superficial fistula or a complex fistula. The sphincter function preservation and the recurrence are the main factors that influence the decision making [6]. The number of modalities which evolved over a period of time is a rough indicator of the level of difficulties in managing this condition. They vary from conservative approaches like fibrosing seton placement, fibrin glue injection and anal fistula plugs to other end of spectrum with complete excision of the tract with sphincter reconstructions or advancement flaps. All these procedures have varying degrees of success depending up on the nature of the fistula and experience of the treating surgeon.

One of the oldest modalities in fistula management is the placement of seton. This can be divided in to two types namely draining seton and a cutting seton. The draining seton is placement of seton through the tract which aid in better drainage and control of infection before further interventions to tackle the tract.

The principle of cutting seton is to gradual cutting through the sphincter with simultaneous fibrosis of the cut through tract. The main advantage is the minimal damage to the sphincter. Disadvantage is the pain, requirement of multiple hospital visits and minimal sphincter dysfunction due to the scarring[7].

In our study of complex fistula management, this technique has much more advantages than the disadvantages that are mentioned above. In our setup health care system various other advanced modalities of management of complex fistulas are not easily available or affordable to most of the patients.

Secondly this modality offers sufficient time recognize and change the line of management like in case of a cutting seton causing any sphincter dysfunction a during the subsequent phases of tightening can be well managed by converting it to drainage seton to give sufficient time for healing thus avoiding a long term morbidity. Network based analysis of best modality for fistula management by Wang Q showed that the seton placement is the best option to avoid a sphincter damage [8].

A study by Andreas Lentner M.D. &Volker Wienert M.D. Long-term, indwelling setons for low trans sphincteric and inter sphincteric anal fistulas showed the average healing time 54.8 weeks[9]. As in our study group, addition of excision of the tracts till the sphincter and then placing the cutting seton gives a clear advantage of sufficient drainage of the tract through the external wound and reducing the length of the tract need to be addressed by the seton. We found this step reduces the overall time for healing. The average healing time in our study group was 5.2 weeks. Recurrence rate in our study was around 11% which is in line to other similar study by Kelly ME et al recurrence was 6% [10].

In cases of accompanying deep-seated abscess, the technique of placing a small sized irrigation tube along with fistulectomy and seton placement offered better healing. We could achieve complete healing in all ceases managed by this method.

Use of methylene blue/mixture of betadine and hydrogen peroxide injection through the external opening offered better delineation and identification of the tract compared to the betadine. Use of electro cautery for the excision of the tract was found to be very useful tool identify the sphincter by contraction as the tract approaches the sphincter thus avoiding inadvertent injury to the sphincters.

All our cases the seton changes were done in outpatient department using lignocaine local infiltration and help of the other loose seton placed as mentioned in methods.

Incision on peri anal skin and the anal mucosae and placing the seton correctly in the same raw area helps in reducing pain significantly in post-operative period and post seton change.

Conclusions:-

To conclude placement of seton in sphincteric portion of fistulous tract is safe, effective, easy to learn and less technically demanding with acceptable recurrence rate.

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Declaration of Conflicting Interests

The Author(s) declare(s) that there is no conflict of interest

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References:-

1. Haig Dudukgian, HerandAbcarian. Why do we have so much trouble treating anal fistula? World J Gastroenterol 2011 July 28; 17(28): 3292-3296 ISSN 1007-9327 (print) ISSN 2219-2840 (online)
2. Ommer A, Herold A, Berg E, Fürst A, Sailer M, Schiedeck T. Cryptoglandular anal fistulas. DtschArzteblatt Int. 2011;108(42):707-713.
3. Parvez Sheikh. Controversies in Fistula in Ano. Indian J Surg (May-June 2012) 74(3):217-220 DOI 10.1007/s12262-012-0594-5
4. Parks A G. Pathogenesis and treatment of fistula-in-ano. BMJ. 1961;1(5224):463-469.
5. Steele SR, Kumar R, Feingold DL, Rafferty JL, Buie WD; Standards Practice Task Force of the American Society of Colon and Rectal Surgeons. Practice parameters for the management of perianal abscess and fistula-in-ano. Dis Colon Rectum 2011;54(12): 1465-1474
6. Jacob TJ, Perakath B, Keighley MR. Surgical intervention for anorectal fistula. Cochrane Database Syst Rev. 2010;CD006319.
7. World J Gastroenterol. Jul 28, 2011; 17(28): 3286-3291 Published online Jul 28, 2011. doi: 10.3748/wjg.v17.i28.3286 (<http://dx.doi.org/10.3748/wjg.v17.i28.3286>) Current management of cryptoglandular fistula-in-ano.
8. Wang Q , He Y , Shen J. The best surgical strategy for anal fistula based on a network meta-analysis. Oncotarget. 2017 Oct 12;8(58):99075-99084. doi: 10.18632/oncotarget
9. ANDREAS LENTNER M.D. & VOLKER WIENERT M.D LONG-TERM, INDWELLING SETONS FOR LOW TRANSSPHINCTERIC AND INTERSPHINCTERIC ANAL FISTULAS DISEASES OF THE COLON & RECTUM VOLUME 39, PAGES1097-1101(1996).
10. Kelly ME, Heneghan HM, McDermott FD, Nason GJ, Freeman C, Martin ST, Winter DC. The role of loose seton in the management of anal fistula: a multicenter study of 200 patients. Tech Coloproctol. 2014 Oct;18(10):915-9.