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Original Article

MANAGEMENT OF COMPLEX MULTIPLE FISTULA IN ANO USING KSHARSUTRA LIGATION WITH REDUCE FECAL CONTAMINATION BY LOOP CONCEPT – A CASE STUDY

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Abstract:

Fistula-in-ano is a chronic inflammatory condition characterized by abnormal communication between the anal canal and perianal skin. Complex multiple fistulae pose significant challenges due to recurrent infection, fecal contamination, prolonged healing time, and risk of sphincter damage. Ksharsutra therapy, a well-established Ayurvedic parasurgical technique, has shown effective results in managing fistula-in-ano.

This case study highlights the successful management of a complex multiple fistula-in-ano using Ksharsutra ligation with the innovative LOOP concept to reduce fecal contamination and promote faster healing.

Keywords: Fistula in ano, Ksharsutra, LOOP Concept, fecal contamination.

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Introduction:

Fistula-in-ano commonly results from cryptoglandular infection and it is well known for recurrence and chronicity. Complex fistulae involve multiple tracts, high anal sphincter involvement, or recurrent disease. Conventional surgical techniques carry risks such as incontinence, recurrence, and delayed wound healing.

Ksharsutra therapy, described in Sushruta Samhita, employs a medicated alkaline thread that gradually cuts through the tract while promoting healing [(1)]. However, in complex multiple fistulae, fecal contamination delays wound healing and causes persistent discharge.To overcome this limitation, a LOOP concept technique was adopted, wherein a specific plan of diet is used to minimize fecal contact with the healing tract [(2)].

Review of Literature:

Fistula-in-ano is a chronic anorectal condition often resulting from cryptoglandular infection, with complex fistulae presenting multiple tracts, high sphincter involvement, and recurrent disease, making management challenging due to risks of incontinence, persistent sepsis, and fecal contamination of healing wounds. Complex fistulae are typically defined by features such as multiple external openings, high trans-sphincteric or suprasphincteric course, and secondary extensions, necessitating tailored interventions rather than simple fistulotomy [(3)].

Conventional sphincter-preserving techniques for complex fistulae include loose seton drainage, advancement flaps, LIFT (ligation of the intersphincteric fistula tract), and emerging minimally invasive procedures, all aimed at controlling sepsis while preserving continence [(4)]. Seton placement, in both loose and cutting forms, remains widely accepted for high and multiple tract disease because it allows continuous drainage, reduces abscess formation, and can gradually divide tissue while encouraging fibrosis [(5)].

Ksharsutra therapy, described in Ayurvedic surgical texts, functions as a chemical seton, combining medicated thread ligation with controlled chemical cauterization. Clinical studies and case reports support its effectiveness in fistula management, demonstrating satisfactory healing, sphincter preservation, and acceptable recurrence rates. Ksharsutra has shown comparable outcomes to conventional techniques in selected cases, with the additional benefit of outpatient management and minimal invasiveness [(6).]

However, persistence of discharge and delayed healing due to fecal contamination remain significant hurdles, especially in complex multiple fistulae. Modifications to Ksharsutra techniques—such as loop configurations or drainage optimization—have been proposed to improve tract control and reduce contamination, though high-quality comparative data are limited. This highlights the need for innovative approaches like the LOOP concept to address fecal soiling and enhance healing in complex fistula-in-ano.

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Methodology:

A Single clinical case of 65yr female patient of complex multiple fistulae in ano. Informed written consent of patient taken. Patient admitted in hospital and IV antibiotics given for first 3 days. First 2 days ethilon Theard were placed in both tracts. After that K.S. ligation done on 3rd day for 7 days. K.S. changed on very 8th day. To avoid fecal contamination, we used innovative LOOP concept.

Case Record:

A patient came in surgery O.P.D and She was suffering from following complaints:

- Pain at anal region.
- Discharge at anal region.
- Unable to seat.
- Swelling at perianal region.

Above patient was healthy before 1 year. After that she underwent perineal tear repair in private hospital, then she was suffering by above complaints. After that she took some surgical treatment for that but didn't get any relief. so, she came to my hospital and admitted in the hospital for further management.

Past History:

- **Medicinal History -** known case of hypertension
- **Surgical History -**
  Incision and Drainage done before 4 months.
  Fistulectomy done before 6 months.
- **Drug History –** No any Specific drug history noted
- **Family History -**
  No any relevant family history noted
- **Personal History -**
  Occupation - Housewife
  Addiction – none
  Diet – Vegetarian
  Appetite – Regular
  Urine – Regular
  Stool – Regular

Systemic Examination:

R.S. – Air entry bilaterally equal and clear, no abnormal sound heard.
C.V.S. – S1 S2 normal, No Cardiac Murmurs heard
C.N.S. – Conscious and oriented to time, place, person.
Per Abdomen – Soft, non-tender, Liver and spleen not palpable.

Local Examination:

Patients' examination done in lithotomy position.

Perianal region – there is external opening at 2 o'clock and 10 o'clock position.

- Fibrous tract felt on both sides.
- About 3cm away from anus.
- Discharge present from both openings.
- Faecal matter coming out through both openings.

Anal Verge – no any deformity.

PR Digital – There is internal opening at 12 o'clock position.

Investigations:

HB – 10.7gm%
Sr.Creat – 1.09 mg/dl
WBC – 10000/cmm Blood Sugar (R) – 116mg/dl

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Platelets - 255000
HbsAg & HIV – Non-Reactive

Treatment:

First Patient admitted in IPD, then IV Antibiotics given for 5 days with K.S. change every 8th day along with LOOP concept to avoid faecal contamination.

- Inj. Oframax fort 1.5gm IV BD
- Inj. Metro 100ml IV BD
- Inj. Pan 40mg IV BD
- Inj. Ondem 4mg IV BD
- Inj. Neomol 1gm IV BD
- Tab. A to Z NS+ 1BD
- Syp. Orofer XT 5ml BD
- Protinex powder 2tsp with milk BD

After 10th days patient discharged and advised to follow up after 8th days for K.S. change. Also, patient maintain on LOOP concept for next 6 weeks for fast healing of wound and avoid faecal contamination. LOOP can be implemented for a few days to weeks depending upon the patient's tolerance. If the patient can tolerate it well, then it can be extended as needed without any negative consequences as all the nutritional requirements are fully taken care of while the patient is on LOOP. In this study patient maintained on LOOP for 6 weeks.

Loop Concept [(2)]:

L	Liquid diet with no Fiber Clear fluids (with zero Fiber) like juices, coconut water, clear soups with butter, soft drinks, glucose water, tea, coffee etc.
O	Oral rehydration solution (ORS) The electrolytes (sodium, potassium, chloride *etc*.) are taken care by this.
O	Oral vitamins and protein.
P	Phosphate Enema is given on the first day of the treatment so as to evacuate the rectum and clear the bowels.

Assessment Criteria:

Assessment done by observing length of the fistula tract in cm.

Observations and Results:

We did K.S. Change on every 8th day for 6 weeks and data recorded on every 8th day of follow up.

Weeks	**Length of fistula**		**Medication**
	2 o'clock	**10 o'clock**	
0th Day	3.0 cm	2.80cm	LOOP + IV Antibiotics
1st week	2.70cm	2.40cm	LOOP + IV Antibiotics
2nd week	2.10cm	2.00cm	LOOP + Oral medicines
3rd week	1.60cm	1.50cm	LOOP + Oral medicines
4th week	1.20cm	1.10cm	LOOP + Oral medicines
5th week	0.60cm	0.70cm	LOOP + Oral medicines
6th week	Cut completely	Cut completely	LOOP hold and shifted on regular diet

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Discussion:

Management of complex multiple fistula-in-ano is challenging due to recurrent sepsis, multiple tracts, sphincter involvement, and persistent fecal contamination, which significantly delays wound healing. Conventional surgical procedures often carry the risk of recurrence and postoperative incontinence, particularly in recurrent and high fistulous disease.

Ksharsutra therapy acts as a chemical seton that gradually cuts through the fistulous tract while promoting healthy granulation and fibrosis, thus preserving sphincter integrity. In the present case, regular weekly Ksharsutra changes resulted in progressive reduction in fistula tract length, with complete cut-through achieved within six weeks, indicating effective tract eradication.

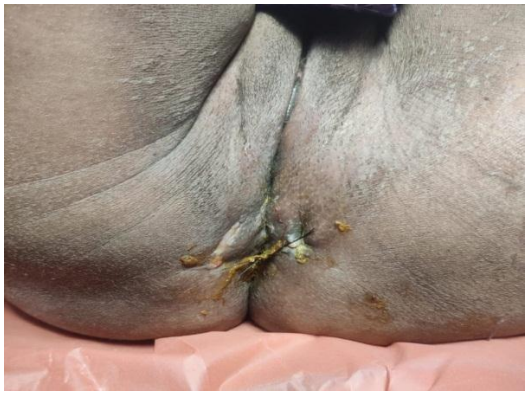
A major obstacle in complex fistula management is fecal contamination, which perpetuates infection and discharge. The innovative LOOP concept, comprising a fiber-free liquid diet, oral rehydration, nutritional supplementation, and initial rectal evacuation, significantly minimized fecal soiling of the wound. This created a clean local environment, reduced discharge, and accelerated healing.

The consistent reduction in tract length observed weekly supports the combined effectiveness of Ksharsutra ligation and the LOOP concept in controlling infection, minimizing contamination, and promoting faster wound healing. Thus, this integrative approach appears to be a safe, sphincter-preserving, and effective modality for complex multiple fistula-in-ano, especially in recurrent cases.

Conclusion:

The present case supports that Ksharsutra ligation using the loop concept is a safe, effective and sphincter-preserving technique in the management of complex multiple fistula-in-ano. It not only enhances wound healing but also significantly reduces fecal contamination, which is the main obstacle in managing complicated fistulous disease. This method may serve as a valuable alternative to conventional surgical procedures, especially in recurrent and multiple tract fistulas

Pre treatment



K.S. Ligation

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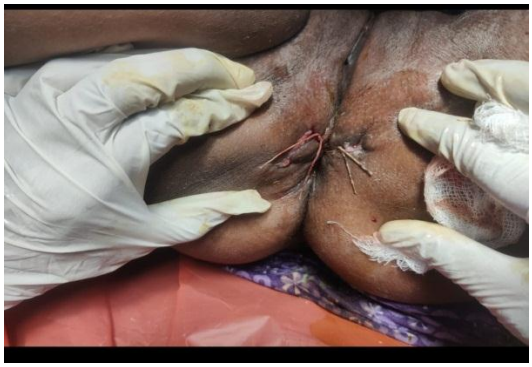
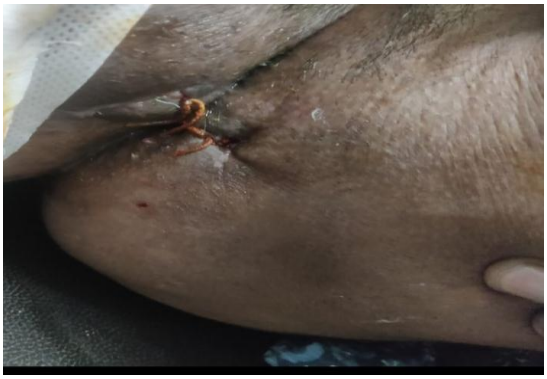
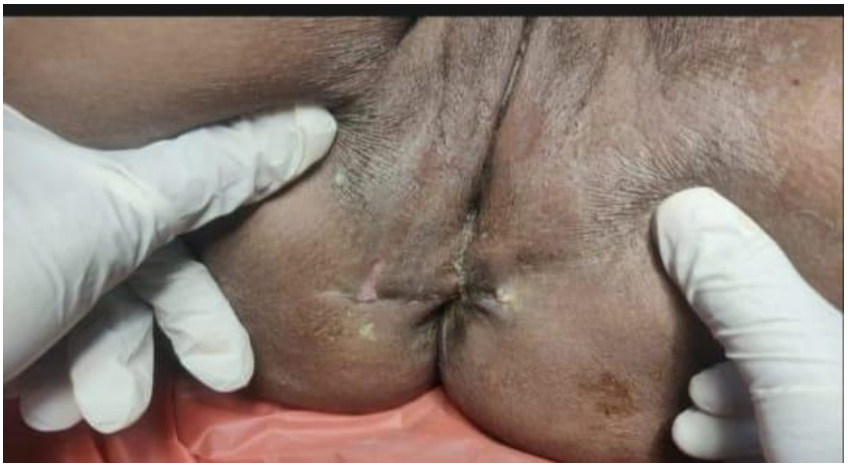
3rd week



5th Week



Complete Healing of Fistula (6th Week)



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