



# Recurrent Inter-Sphincteric Pediatric Fistula in Ano Cured by Kshar Sutra (a Medicated Seton): A Case Report

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## ABSTRACT

Fistula in ano (FIA) in the pediatric population is infrequent and poorly understood. The management of paediatric FIA remains a matter of debate. This case report highlights a 10-year-old boy with an inter-sphincteric fistula successfully treated with Kshar Sutra (a medicated herbal seton), with weekly thread changes. The procedure was conducted under local anaesthesia. Antibiotics were not given to prevent infection. The wound was completely healed in 7 weeks. The child has been fistula-free for 5 years, indicating that the Kshar Sutra method is an effective treatment option for similar pediatric cases.

**Keywords:** Case report, fistula in ano, Kshar Sutra, pediatric, recurrent

## Introduction

Fistula in ano (FIA) in the pediatric population is infrequent and poorly understood. Several features distinguish pediatric FIA from its adult counterpart. It occurs almost exclusively in otherwise healthy boys under 2 years of age and originates in contiguous crypts.<sup>1-3</sup> Some authors have hypothesized a congenital etiology due to the high incidence of FIA in infants, the overwhelmingly male predominance, and the higher incidence of associated FIA.<sup>4</sup> The infection in the anal gland forms an abscess, most commonly in the 3 o'clock and 9 o'clock positions, and 20-85% of perianal abscesses are reported to progress to FIA. As such, anal fistula should be considered a continuing disease of perianal abscess.<sup>5</sup> Treatments such as fistula-tract laser closure (FiLaC), ligation of inter-sphincteric fistula tract (LIFT), fistulotomy, cutting seton, seton stitch, fistulectomy, fibrin glue injection, fistula plug, endorectal advancement flap, video-assisted anal fistula treatment, and stem cell therapy are practised throughout the world. The management of FIA during childhood remains controversial

because it depends on the surgeon's approach, such as conservative or surgical treatment, use of antibiotics, and surgical timing.<sup>6</sup> Therefore, the search for the best treatment of FIA in children remains ongoing. Herein, we present a rare case of recurrent inter-sphincteric pediatric FIA cured by Kshar Sutra (a medicated herbal seton).

## Case Report

A 10-year-old boy had been suffering from recurrent perianal abscesses since August 2018. He had a history of abscess drainage multiple times. A physical examination was conducted in July 2019 at Om Ayurvedic Clinic. On examination in the lithotomy position, the internal opening was at the 12 o'clock position, 1 cm from the anal verge. There was no anal sphincter spasm. Specific non-diagnostic conditions were excluded. Magnetic resonance imaging revealed a linear fistula 3.7 cm in length with an internal opening at the 12 o'clock position (Figure 1). A blind extension toward the scrotum was 1.5 cm from the external opening. The patient was healthy and there



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was no history of Crohn's or any other disease. The Kshar Sutra thread was used to treat the patient's fistula.

Informed patient consent was obtained. Under local anaesthesia, the fistula was traced with a probe. The Kshar Sutra seton was then inserted through the external opening of the fistula and taken out through the anus. An artificial opening was created at the end of the blind extension. The second thread was inserted from the existing external opening and taken out through the artificially made opening. Both ends of each thread were tied to fix their positions (Figure 2). The procedure took 30 minutes.

Weekly follow-ups were on an outpatient basis. Local anaesthesia was used in and around the fistula each time. Both threads were replaced with new ones. The patient had follow-ups for 5 weeks, and a new Kshar Sutra was inserted each week using the same procedure. There was an open, clean wound after 5 weeks of treatment (Figure 3). No supplementary medicines were prescribed for wound healing or infection control. A non-steroid anti-inflammatory drug was recommended as a painkiller whenever necessary. There were no complications such as infection, severe pain, severe bleeding, and incontinence following the procedure. Daily

dressing with Betadine® 10% liquid was advised. The wound was completely healed in 7 weeks. The patient was placed under observation for 8 weeks. He has been fistula-free for the last 5 years (Figure 4).

## Discussion

Few data are available on anal fistulas in the pediatric population. The treatment of FIA usually involves fistulectomy or fistulotomy, in which the fistulous tract is excised or opened across its entire length to identify the corresponding abnormal anal crypt. Rojanasakul et al.<sup>7</sup> and Vander Mijnsbrugge et al.<sup>8</sup> reported a success rate of LIFT for FIA treatment of 94.4% and 40.0%, respectively. van der Hagen et al.<sup>9</sup> observed that after 12, 48, and 72 months, the FIA had recurred in 9 (22%), 26 (63%), and 26 (63%) patients of their mucosal advancement flap group. Frountzas et al. conducted a systematic review and meta-analysis of eight studies, which included 476 patients. The study reported that the pooled success rate of the FiLaC

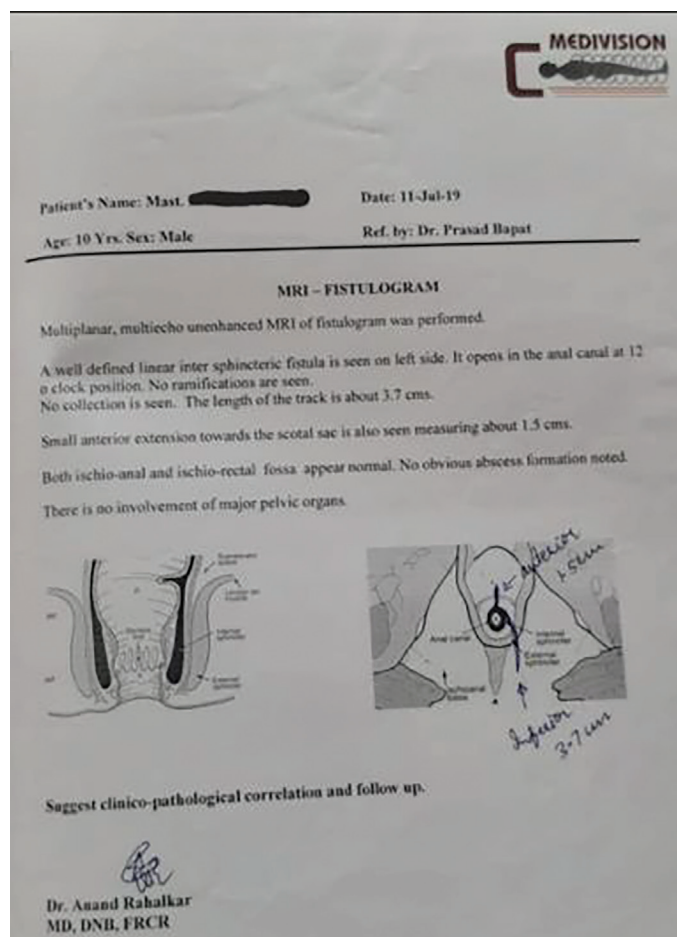


Figure 1. Magnetic resonance imaging fistulogram



Figure 2. Kshar Sutra end tied



Figure 3. Follow-up 5 weeks after the procedure



**Figure 4.** Follow-up image taken on April 16, 2025

technique was 63%, and that the complication rate was 8.0%.<sup>8</sup> Following fistulectomy or fistulotomy, parents are instructed to place the child in a sitz bath after each bowel movement, at least twice daily, and to separate the skin edges of the wound during bathing to promote healing by secondary intention.<sup>10</sup> Controversy still surrounds the etiology and proper management of this condition, as well as the recurrence rate after surgery, which may be as high as 68%.<sup>11</sup>

In his writings, Hippocrates described the use of horse hair setons.<sup>12</sup> Sushrut, an ancient Indian surgeon from 500 BC, explained the herbal thread called Kshar Sutra for FIA.<sup>13</sup> Different formulations of drugs are used for the making of the Kshar Sutra thread. The most common herbal mixture used for coating is Snuhi latex (*Euphorbia neriifolia* Linn), Apamarga (*Achyranthes aspera* Linn), and turmeric powder. The thread is a blend of herbal medicines and cutting seton, and it has a cutting and a healing action. The medicated seton has a slow drug release, with the chemical action of the herbal mixture on the infected tissue loosening and liquefying it. The slow cutting and healing avoid incontinence and other complications. The Kshar Sutra technique is an ancient Indian para-surgical treatment and presents a compromise between existing aggressive and conservative treatments. Moreover, there is no need for any post-operative medication for healing, with keeping the wound clean sufficient.

The limitations of the present case report include that only one case is presented and we have not conducted a randomized controlled study. The practical implementation difficulties

of the procedure should also be considered, such as the standardization of preparing Kshar Sutra, the lack of runtime imaging technology to ensure the insertion of the thread in the fistula track, and the training of doctors. Large-scale multicentric studies are required to prove the efficacy and safety of Kshar Sutra treatment.

## Conclusion

There is no single guaranteed treatment for FIA. Successful results were obtained in the single case reported herein. Ancient Indian Kshar Sutra treatment can present an effective herbal alternative with a high success rate without recurrence or incontinence.

## Ethics

**Informed Consent:** Informed consent was obtained.

## Footnotes

### Authorship Contributions

Surgical and Medical Practices: P.B., V.B., Concept: P.B., V.B., D.S.P., Design: P.B., V.B., D.S.P., Data Collection or Processing: P.B., V.B., Analysis or Interpretation: P.B., V.B., D.S.P., Literature Search: P.B., V.B., D.S.P., Writing: P.B., V.B., D.S.P.

**Conflict of Interest:** No conflict of interest was declared by the authors.

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