# A Study of Results of Seton Therapy as a Treatment for Complex Anal Fistulas: A Case Series

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**Abstract:** ***The challenge of surgery for anal fistula is to eradicate the fistula track while maintaining anal continence. Aim of this study was to analyze the influence of seton technique for high anal fistulas, on results of recurrence and postoperative faecal incontinence and need of permanent stomy. A total of 13 patients of complex anal fistula were operated by seton technique over a period of two and half years, with a follow-up of 6months. Of the 13 patients, 3 developed recurrence (22%), with no reported case incontinence to stool or flatus on repeated follow-ups, thus achieving a healing rate of 78%.***

**Keywords:** complex fistula, seton, incontinence, recurrence, healing rate.

## 1. Introduction

Complex anal fistula treatment poses a great challenge to the treating surgeon, as it is often associated with recurrences and anal incontinence.

Treatment must be directed by the:

- Etiology
- Anatomy of the fistula
- Degree of symptoms
- Patient co morbidities
- And the surgeon's experience

Keep in mind the progressive tradeoff between:

- Extent of operative sphincter division
- Postoperative healing rates
- And functional compromise

Seton therapy has been used since a very long time for treatment of anal fistulas. Here we prospectively study a case series of complex anal fistulas treated with the *Fistulectomy with Seton Placement* procedure to reduce recurrences and avoid incontinence.

## 2. Principle

The principle of setonfistulotomy is that any striated muscle that lies superficial to the fistula track is encircled by a piece of a silk thread. The thread is tied tightly and left in situ so that, for a week or two, the striated muscle is slowly divided by a process of ischemic necrosis due to the seton. However, because the process is slow, the muscle does not spring apart, leaving a defect, but heals behind the process of division, so that fibrous tissue is laid down in the bed of the fistula. This process avoids the development of a gutter deformity, which is usually associated with soiling and impaired continence.

## 3. Methods

A total of 13 patients of complex anal fistula were operated by seton technique over a period of two and half years, with a follow-up of 6months. All of the patients had crypto glandular anal fistulas, none of them suffered from Crohn's disease or malignancy.4 patients had history of previous fistula surgery. The operative steps consisted of identification of internal and external openings of the fistula tract, excision of fistula tract, cutting the perianal skin and skin of anal canal and insertion of a cutting silk seton around both internal and external sphincters. A seton thread impregnated with tetracycline was used in the study. Tetracycline had a local antibiotic as well as its fibrosing action augmented sphincter healing. The seton was tightened twice every week till it cut all the way through the sphincter with subsequent healing of the sphincter. Patient was discharged with seton in situ when the fistulotomy wound showed good healing, and was followed twice every week. The seton thread was changed every two weeks, and care was taken that there was no bridging over the fistulotomy wound during healing.

## 4. Results

| *No. of cases* | *No. of recurrences* | *Ostomies required* | *No. of incontinence* | *Healing rate* | *Mean Healing time* |
|---|---|---|---|---|---|
| 13 | 3(22%) | 0 | 0 | 78% | 1.5 to 2months |

The fistula was cured in 10 patients (78 percent) with no reports of altered continence at the time of discharge or in the outpatient review. Recurrence developed in 3 patients (22 percent). Long-term follow-up revealed none of the patients suffered from anal incontinence or fecal soiling or required the need for permanent stomy. The average healing time was 1.5 to 2 months.

## 5. Conclusions

The research data suggest that medicated cutting setons are effective in treating complex fistula-in-ano with regards to preservation of anal function, acceptable recurrence rates and a good quality of life with an additional advantage of reduced healing time and hospital stay.

## 6. Future Scope

This study had incorporated a medicated seton impregnated with tetracycline which gave healing results better than those in previous mentioned studies. However, due to the small sample size of patients in this study, this conclusion cannot be standardized. A larger study with larger sample size will appropriately quantify and establish medicated seton therapy as one of the most useful therapies for complex fistula management.

## 7. Discussion and Literature Survey

A lot of studies have been performed on the most ideal method for anal fistula management. The seton therapy has been studied and used for a long time with varying results in different series and settings. Several modifications of seton have also been used. Below are reports detailing incontinence rates after cutting seton treatment for anal fistula in different studies.

| *Reference* | *Country* | *Type of seton* | *Incontinence* |
|---|---|---|---|
| Charua-Guindic et al [7] | Mexico | Silastic | 8/50 |
| Cox et al[8] | USA | Silk no 2 | 4/8 |
| Culp[4] | USA | Penrose drain | 3/20 |
| Decanini-Teran et al[9] | Mexico | Silastic tube | 0/42 |
| Deshpande et al[5] | India | No 20 chemically treated linen | 0/397 |
| Dziki-Bartos[10] | Poland | Rubber band | 12/32 |
| Fasth et al[11] | Sweden | Braided silk | 0/7 |
| Flichcarbonel et al[12] | Spain | Non absorbable | 3/19 |
| Garcia-Aguilar et al[13] | USA | Rubber band | 8/12 |
| Gonzalez-Ruiz et al[14] | USA | Silastic vessel loop | 0/31 |
| Gurer et al [3] | Turkey | Self locking cable tie | 0/17 |
| Hamalainen and Sainio[15] | Finland | Nonabsorbable braided suture | 22/35 |
| Hemel et al[16] | Switzerland | Non absorbable braided suture | 0/12 |
| Hasegawa et al[17] | UK | Various | 15/28 |
| Held et al[18] | USA | Rubber band | 0/9 |
| Ho et al[1] | Singapore | Chemical | 3/46 |
| Isbister and alsanea[19] | Saudi Arabia | 1-0 silk ligature | 17/47 |
| Joy and Williams[20] | UK | Silastic | 5/10 |
| McCourtney and Finlay[21] | Scotland | Silk ligature | 3/16 |
| Mentes et al[22] | Turkey | Elastic | 4/20 |
| Misra and Kapur[23] | India | No1 braided stainless steel | 0/53 |
| Mohite et al [6] | India | Medicated seton | 0/114 |
| Pescatori et al[24] | Italy | NA | 3/17 |
| Qureshi et al[25] | Pakistan | Silk thread | 2/4 |
| Shukla et al[2] | India | Chemical | 8/155 |
| Theera pol et al [26] | Singapore | Prolene 0 | 0/41 |
| Tocchi et al[27] | Italy | NA | 4/28 |
| Vatansev et al[28] | Turkey | Cable tie | 5/32 |
| Walfisch et al[29] | Isreal | No 0 heavy silk | 0/73 |
| Williams e al[30] | USA | No 1 silk | 8/13 |

### 7.1 Comparisons of Healing Rate with other Treatment Modalities

| *Method* | *Healing rate* |
|---|---|
| Anal fistula plug | 40 %( 15-85%) |
| Fibrin glue | 15 %( 10-70%) |
| Fistulectomy with primary sphincter reconstruction | 90 %( 80-95%) |
| Fistulectomy with secondary sphincter reconstruction | 95% |
| Flap procedure | 70 %( 50-80%) |
| Long term Seton therapy(This study) | 78% |

As compared to other modalities of treatment, seton therapy is cheaper, easier to perform and follow-up, having reasonably higher healing rates, with good quality of life in our set-up.

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