Ligation of intersphincteric fistula tract for complex anorectal fistulas with initial promising results

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Background
The aim of anal fistula treatment is to cure the disease without any risk for fecal incontinence. Surgery for treating anal fistulas can be divided into two types: sphincter-sacrificing and sphincter-saving methods. There are many sphincter-saving operations such as ligation of the intersphincteric fistula tract, application of fibrin glue, endorectal advancement flap, and video-assisted fistula surgery.
Objective
The aim of this study was to evaluate the effectiveness of intersphincteric ligation of the fistulous tract in the management of complex anal fistula.
Design
Study of patients with complex anal fistulas was done prospectively from 1 September 2013 to 31 January 2015. Patients' data, fistula type determined by magnetic resonance imaging, continence scales before and after surgery, previous surgery, healing rates, recurrence rates, re-do in recurrent cases, and complications were recorded.
Settings
The study was conducted at a single tertiary care institution.
Patients
Eighteen patients were included.
Main outcome measures
These included recurrences, surgical time, complications, and fecal incontinence.
Results
The study included 18 patients. Two patients were female and 16 were male. The mean age was 35.55 ± 9.89. The median wound-healing time was 2.44 weeks. Of the 18 patients, 16 (88.9%) had complete healing of the fistula. None of the patients developed fecal incontinence.
Conclusion
Ligation of the intersphincteric fistulous tract is an effective technique for treatment of anal fistula. It is also a good option for maintaining continence and sphincter saving in the management of fistula-in-ano.
Study limitations
The small number of patients and the short follow-up period are the major limitations of this study.

Keywords:
complex fistula, fistula-in-ano, incontinence, intersphincteric fistula tract

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Introduction

Perianal fistulas are a common surgical problem. The disease has an incidence of 8.6 per 100 000 people [1]. 'Complex fistula' carries the risk of recurrence or incontinence following treatment. Broadly, complex fistulas are defined as those that are not low trans-sphincteric or intersphincteric fistulas. The aim of anal fistula treatment is to cure the disease without any fecal incontinence. Surgical techniques used in treating anal fistulas can be classified into two types: sphincter-sacrificing and sphincter-saving methods [2].

There are a number of sphincter-saving methods such as an endorectal advancement flap, application of fibrin glue, VAAFT (video-assisted technique), and ligation of the intersphincteric fistula tract (LIFT) [3]. The LIFT technique is the novel modified approach through the intersphincteric space for the treatment of perianal fistula. The LIFT procedure is based on the closure of the internal opening and eradication of infected cryptoglandular tissue through the intersphincteric approach [4]. The procedure was performed by a Thai colorectal surgeon, Arun Rojanasakul, Colorectal Division, Department of

Surgery, University of Chulalongkorn in Bangkok, Thailand. [5].

Aim

The aim of this study was to evaluate the result of ligation of the intersphincteric fistula tract for the management of complex perianal fistulas.

Patients and methods

This prospective observational study was carried out on patients attending Sohag University Hospital's Outpatient Surgery Unit for treatment of complex fistulas arising from cryptoglandular infections between 1 September 2013 and 31 January 2015. All patients were informed about the procedures, and written consent and ethics committee approval from Sohag university hospital's ethic committee were obtained.

All patients were diagnosed with fistula-in-ano by history taking and physical examination. An MRI was done to identify the fistula type. Routine investigations and preoperative and postoperative evaluation of continence status using the Wexner incontinence score [6] and clinical continence grading were carried out [7].

The inclusion criteria were as follows: (a) age older than 18 years; (b) presence of complex anal fistulas in patients with newly diagnosed fistulas; (c) absence of sinus on MRI.

Exclusion criteria were as follows: (a) superficial fistulas; (b) Crohn's perianal disease; (c) malignancy; and (d) recurrent fistula.

Operative technique

Patients were admitted 1 day before surgery. Broad-spectrum antibiotics were given 1 h before surgery. All operations were performed under regional anesthesia. The Lloyd Daves position was used. The internal opening was identified by injecting methylene blue or povidine iodine through the external opening, or by passing a stylus through the external hole to check it in the inner hole. An incision was made parallel to the anal verge through the intersphincteric groove. Dissection was carried out into the intersphincteric space to identify the fistula tract. The intersphincteric tract was ligated at two points: one at the emergence of the internal sphincter and the other at the external sphincter with polyglactin 2.0. The remaining intersphincteric fistula tract was resected to remove infected tissue remaining in the wound. The external opening was left open to heal by secondary intention and to promote good drainage of the wound.

All of the patients were discharged on analgesia and laxative. Before discharge, they were shown how to clean their wounds with tap water.

Follow up

Patients were followed up at 2, 4, 8, and 12 weeks after operation. Patient's clinical continence status was recorded. Wound examination was carried out, and other morbidities were also assessed at each visit (Figs. 1–6).

Statistical analysis

Data were analyzed using mean ± SD for numerical variables and number (%) for nonparametric variables. Student's t-test and χ^2-test were used. P values less than 0.05 were considered significant. The statistical package for social sciences (version 16; SPSS Inc., Chicago, Illinois, USA) was used for statistical analysis.

Results

From 1 September 2013 to 31 January 2015, 18 patients underwent LIFT operation in the Department of General Surgery, Sohag University Hospital. There were 16 male and two female patients and the average age was 35.55 ± 9.89 years. Classification by type of fistula showed that 14 patients had high-trans-sphincteric-type fistula and four had a horseshoe type.

The mean operative time was 29.33 ± 8.93 min. Follow-up period was 17.33 ± 4.29 weeks. The

Figure 1

Patient with multiple perianal fistulas.

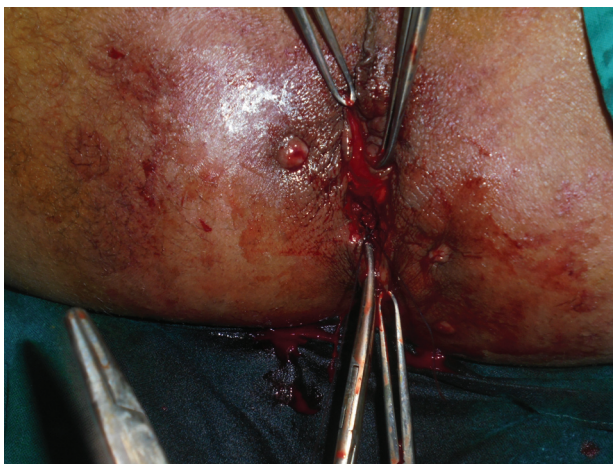
Figure 2

Identification of intersphincteric fistula tract.

Figure 3

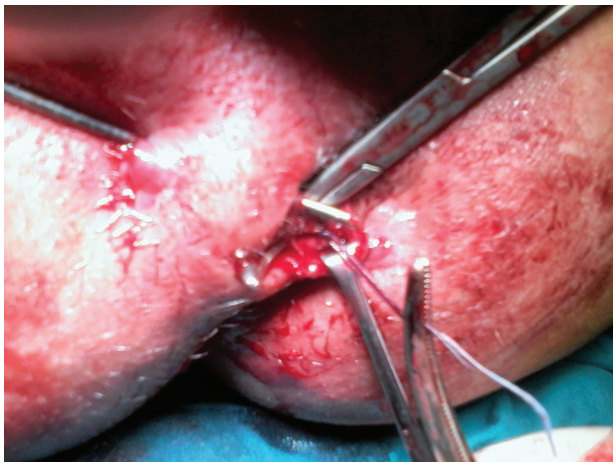
Dissection and identification of the tract.

Figure 4



Ligation of the tract at the internal opening.

Figure 5



Styllus inside the tract.

Figure 6

Closure of the intersphincteric space and final view.

median wound-healing time was 2.44 ± 1.24 weeks. Four cases developed wound sepsis and disruption of the intersphincteric wound at postoperative day 5. Two of them responded to medical treatment in the form of quinolone tablets plus metronidazole at the end of the second week. The other two had persistent discharge for more than 4 weeks and underwent simple fistultomy. Sixteen (88.9%) had complete healing of the fistula. None of the patients developed fecal incontinence.

Discussion

In this study 18 patients (16 men and two women) of average age 35.55 ± 9.89 were treated by LIFT. The mean operative time was 29.33 ± 8.93 min. During an average follow-up period of 17.33 ± 4.29 weeks, median wound-healing time was 2.44 ± 1.24 weeks. Sixteen

(88.9%) had complete healing of the fistula. None of the patients developed fecal incontinence. In our study the main limitations were the small number of patients and short follow-up period.

Omar Vergara-Fernandez and Luis Alberto Espino-Urbina in 2013 [8] reviewed 18 papers that included 592 patients (65% were male). The median age was 42.8 years. The most common type of fistula was the trans-sphincteric variety (73.3% of cases). The mean healing rate reported was 74.6%, the mean healing time was 5.5 weeks, and the mean follow-up period was 42.3 weeks. No de-novo incontinence developed secondary to the LIFT procedure. The overall success rate was 74.6%.

Sileri *et al*. [9] in a prospective study of 18 patients had a cure rate of 83% with three recurrences, one of which was managed by fistulotomy in one patient and by means of an endorectal advancement flap in the other two patients; all three cases experience complete healing of the fistula. There were also no cases of incontinence in his study.

Makhlouf and Korany [10] in their series of 30 patients (mean age of 36.5 years) who underwent LIFT had a complete success rate of 90%; in their study one patient developed an abscess 6 months postoperatively and three had recurrence. There were no cases of incontinence.

Study limitations

This study is limited by the small number of patients and short follow-up period.

Conclusion

The ligation of intersphincteric fistulous tract proved to be effective for the treatment of anal fistula. It is also a good option for maintaining continence and sphincter preservation in the management of fistula-in-ano.

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

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