

Types of Fistula in Ano and Postoperative Outcomes at Maharat Nakhon Ratchasima Hospital

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Abstract

Background: A fistula in ano is an abnormal tract or cavity communicating with the rectum or anal canal by identifiable internal opening. Recurrent rates after treatment may approach 25%.

Objective: To assess the relative prevalence of each type of fistula in ano, describe intraoperative findings and determine recurrence rate.

Patients and methods: Fistula in ano patients who underwent operation from 1 January 2009 to 31 July 2010 at Maharat Nakhon Ratchasima Hospital were prospectively studied.

Results: There were 120 patients (101 men, 19 women), aged between 2 to 87 years (mean age 42.4 years). Fistula-in-ano was simple in 84 patients (70%) and complex in 36 patients (30%). Among the complex fistula in ano patients were those with high transphincteric fistula in 9 cases (25%), extrasphincteric in 1 case (2.8%), anterior fistula in the female in 7 cases (19.4%), coexistent with inflammatory bowel disease in 5 cases (13.9%), with multiple simultaneous fistula in 10 cases (27.8%), and had prior sphincter surgeries or injuries in 4 cases (11.1%). Fistulotomy was done in 75 cases (62.5%), core out fistulectomy in 28 cases (23.3%), seton drainage in 16 cases (13.3%), advancement flap in 1 case (0.9%). Overall recurrence was 15% (18 cases). Recurrent rates were 41.7% (15 cases) in the complex fistula in ano group and 3.6% (3 cases) in the simple fistula in ano group, which were significantly different ($P < 0.05$).

Conclusion: Simple fistula in ano was found in 70% and complex fistula in 30% of patients. Overall recurrence rate was 15%; for the complex fistula group the recurrence was 41.7%, which was significantly different from the simple fistula group (3.6%).

Keywords: fistula in ano, type of fistula, recurrence

INTRODUCTION

A fistula is defined as an abnormal communication between any two epithelium-lined surfaces. A fistula in ano is an abnormal tract or cavity from the skin communicating with the rectum or anal canal by identifiable internal opening. Approximately one-third had undergone drainage of anorectal abscesses. In a series of 170 patients without previous fistulas who were followed for an average of 9 months after abscess

drainage, a fistula occurred in 37% and recurrent abscess was reported in an additional 10%¹.

Fistula in ano does not heal spontaneously due to two main reasons. Firstly, fecal particles can enter the primary opening causing infection. Secondly, the intersphincteric fistula tract is compressed between internal and external anal sphincter, thus creating intermittent closed septic foci and persistent sepsis². Recurrence rates may reach 25%. Recurrence is usually

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due to infection that has gone undetected and untreated³.

Surgeons have used inspection and digital examination in the initial assessment of a fistula prior to examination with induction of anesthesia. However, digital examination may fail to detect complex fistulas or may lead to incorrect classification^{4,5}. The most often used anatomical classification to describe the tract of the fistula is that of Parks et al⁶, which was based on the relation to the anal sphincter complex.

The objectives of the present study were to determine the relative prevalence of each type of fistula in ano, describe intraoperative findings and determine recurrence rates after treatment.

PATIENTS AND METHODS

Fistula in ano patients who underwent surgical treatment from 1 January 2009 to 31 July 2010 at Maharat Nakhon Ratchasima Hospital were prospectively enrolled into the study. We collected demographic data, data on the type of fistula (complex or simple), and outcomes (cure or recur within one year). *T*-test and chi-square test with Yates' correction were used for statistical analysis.

The study was approved by the research ethics committee of the Surgical Department, Maharat Nakhon Ratchasima Hospital. Written informed consent was obtained from each patient.

RESULTS

There were 120 patients (101 men, 19 women), (Table 1) aged between 2 to 87 years (mean, 42.4 years), included in the present study. Fistula-in-ano was of simple type in 84 patients (70%) and complex in 36 patients (30%). Among complex fistula in ano,

Table 1 Demographic data (N=120 cases)

Sex male:female (cases (%))	101(84.2%):19(15.8%)
Age (yrs) (mean (SD) (min-max))	42.4(15.75)(2-87)
Type of fistula in ano (cases (%))	
- simple	84(70%)*
- complex	36(30%)**

*Simple fistula group, most of them were intersphincteric fistula

**Complex fistula in ano

1. High transphincteric fistula 9 cases (25%)
2. Extrasphincteric fistula 1 cases (2.8%)
3. Anterior fistula in female 7 cases (19.4%)
4. Patients with coexisting inflammatory bowel disease 5 cases (13.9%)
5. Multiple simultaneous fistulas 10 cases (27.8%)
6. Patients with multiple prior sphincter surgeries or injuries 4 cases (11.1%)

Table 2 Type of procedure

Procedure	Cases (%)
Fistulotomy	75 (62.5)
Core out fistulectomy	28 (23.3)
Seton drainage	16 (13.3)
Advancement flap	1 (0.9)

high transphincteric fistula was seen in 9 cases (25%), extrasphincteric in 1 case (2.8%), anterior fistula in the female in 7 cases (19.4%), fistula coexistent with inflammatory bowel disease in 5 cases (13.9%), multiple simultaneous fistulas in 10 cases (27.8%), and fistula with prior sphincter surgery or injury in 4 cases (11.1%). Fistulotomy was performed in 75 cases (62.5%), core out fistulectomy in 28 cases (23.3%), seton technique in 16 cases (13.3%), and advancement flap in 1 case (0.9%). Overall recurrence rate was 15% (18 cases of 120). The recurrence rate was 41.7% (15 cases) for complex fistula in ano, and 3.6% (3 cases) for simple fistula in ano. The recurrence rates were significantly different between simple and complex fistula in ano groups ($p < 0.05$) (Table 2 and 3).

Table 3 Outcome

Type of fistula	N (case)	Recurrence (case)(%)	P (95% CI of OR)	OR
Complex fistula in ano	36	15*(41.7%)	<0.001**	19.29 (4.61;93.31)
Simple fistula in ano	84	3(3.6%)		

Overall recurrence rate is 15%

*Fistula with coexisting inflammatory bowel disease 5 cases, all of them had recurrence in first year.

**Statistical significance ($P < 0.05$)

DISCUSSION

The principles of anal fistula treatment were probably first described by Hippocrates⁷. Low fistulas generally are treated with fistulotomy or fistulectomy. High or complicated fistulas require more complex surgical care because of incontinence risk⁸. Optimal management is aimed at eradicating the fistula, preserving the anal sphincter, preventing recurrence and allowing an early return to normal activity^{9,10}.

In the literature, intersphincteric fistula occurs in 70% of all fistulas. For the remaining, 25% are transphincteric, 4% are suprasphincteric, and 1% is extrasphincteric^{11,12}. In our study, most simple fistulas were intersphincteric fistula (84 cases) and comprised 70% of all fistulas as well, while the remaining 30% (36 cases) were complex fistulas.

Perianal fistulas affect up to 30% of patients diagnosed with Crohn's disease¹³. Anal fistulas in Crohn's disease are often associated with recurrence, and impaired quality of life¹⁴. Similarly, in our study fistulas with coexisting inflammatory bowel disease (five patients) all had recurrence within the first year after surgery. Although several conservative treatments have been described in the literature to manage Crohn's fistulas, and medical therapy alone has been documented to have a closure rate up to 50%¹⁵, fistulas in Crohn's disease are therapeutically demanding, with newer treatment techniques (fistula plug and fibrin glue) as well as conventional treatment (flap advancement and seton drainage) used for their resolution.

There is great variation in the literature regarding expected rates of recurrence after treatment for fistula in ano, ranging from 0% to 21%¹⁶⁻²¹. The various anatomic types of the fistula are usually associated with different rates of recurrence: none for subcutaneous, 4% to 7% for intersphincteric, and 7% to 17% for transsphincteric fistulas²⁰. In our study, the overall recurrence rate was 15%, with 41.7% recurrence rate for complex fistulas and 3.6% for simple fistulas. This difference was statistically significant ($p < 0.05$).

CONCLUSION

Simple fistula in ano occurred in 70% of patients and complex fistula in 30% in the present study. Most of the simple fistulas were intersphincteric. Overall recurrent rate was 15%, with 41.7% recurrence rate in the complex fistula group and 3.6% in the simple fistula group.

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