



AN OBSERVATIONAL CLINICAL STUDY OF RELEVANCE OF GOODSALL'S RULE IN 50 CASES OF FISTULA IN ANO AT TERTIARY CARE HOSPITAL IN SOUTH GUJARAT

Surgery

Dr Dharmesh Chauhan

Senior resident, Department of General Surgery, New Civil Hospital Surat, Gujarat.

Dr Malhar Bambholia

3rd year resident, Department of General Surgery, New Civil Hospital Surat, Gujarat.

Dr Amit Patel

Assistant Professor, Department of General Surgery, New Civil Hospital Surat, Gujarat.

Dr Devendra Chaudhari

Associate Professor, Department of General Surgery, New Civil Hospital Surat, Gujarat, India.

ABSTRACT

Despite being one of the oldest reported medical conditions, the management and treatment of fistula in ano are still in the evolving phase. The management of fistula-in-ano requires confirmation of the diagnosis, identifying the fistulous tract and inner opening. In majority of patients a single primary fistula tract exists and the anatomy can be determined adhering to the principles described by Goodsall. A thorough clinical examination of the patient is essential in the assessment of fistula-in-ano, sometimes helped by imaging such as magnetic resonance imaging and Fistulogram. Although Goodsall's rule was accepted in the past, as a method to determine the course of the fistula, recent studies showed poor conflicting results. This study is an attempt to review the relevance of Goodsall's rule in clinical practice at a tertiary care hospital in South Gujarat.

KEYWORDS

Goodsall's rule, Fistula in ano, External opening, Internal opening

INTRODUCTION:

Anal fistula is a sequel of the abscess, ulceration or incision drainage that occurs around the anus and rectum, which is manifested as the formation of abnormal channels connecting the anal canal and rectum with the skin around the anus.

Risk factors for an anal fistula include anorectal abscess, inflammatory bowel disease, cutaneous infections, tuberculosis, immuno compromised status, foreign body and rectum.

The wall of anal canal contains anal glands which secrete into anal canal via anal ducts which open into the anal crypts along the level of dentate line. The cryptoglandular theory states the obstruction of these ducts, by accumulation of foreign material (e.g., Fecal bacterial plugging) in the crypts, may lead to perianal abscess and fistula formation. Fistulas can be described as anterior or posterior relating to a line drawn in the coronal plane across the anus, the so-called transverse anal line.

Goodsall's rule states that fistulae with their external opening in front of the transverse anal line generally pursue direct course to the anus, whilst those with external opening behind this line take a curved course to reach the posterior wall of the canal in the midline.^[1] Exceptions to this rule are external openings lying more than 3 cm from the anal verge. These almost always originate as a primary or secondary tract from the posterior midline, consistent with a previous horseshoe abscess.^{[2],[3]}

Fistula-in-Ano severely affects the quality of life of patients, and also has a negative impact on the psychological state of patients who often suffer from depression or anxiety symptoms, ultimately affecting their quality of life.

Perianal fistula is one of the most difficult surgical disorders to treat. Protecting anal function and preventing anal incontinence are very difficult. Surgery is the treatment of choice with the goals of draining infection, eradicating the fistulous tract and avoiding persistent or recurrent disease while preserving anal sphincter function, although recurrence is common.^[4]

This is the Observational clinical study of relevance of Goodsall's rule in cases of Fistula in ano at tertiary care hospital of South Gujarat.

AIMS AND OBJECTIVES:

1. To study if the Goodsall's rule still holds true in presentation of patients with fistula in ano.
2. To study if there is a difference in management of anterior and

posterior fistulas.

3. To study the incidence of anterior and posterior fistulas which are complex

MATERIALS AND METHODS:

This is the retrospective study of 50 cases of fistula in ano operated under Surgery Department of a Tertiary care hospital of South Gujarat during a period of May 2018 to April 2020. Data was collected from history, clinical examination and case review in retrospective manner and classified according to Goodsall's rule. Findings of MRI, if available and operative findings will be compared and will find out relevance of Goodsall's rule.

Inclusion Criteria:

1. Adult patient presented with fistula in ano
2. Age Group: 18–70 year

Exclusion Criteria:

1. Recurrent fistula in ano

OBSERVATION AND DISCUSSIONS:

In this study of 50 patients, 45 were males and 5 were females, which showed that 90% of the cases were reported in Males. In male, there is higher number of anal glands and infection of the anal glands and crypts is the cause of fistula formation. Anal fistulas are therefore more common in male.^{[23],[24]}

The distribution of fistula cases in the study according to age of the patient revealed that the majority of the cases were seen in the 41–50 years age group (36%) with a mean age of 37.4 years. This is in accordance with the study by Sainio et al in 1984 which report the mean age of fistula presentation as 38.3.^[22]

Table 1: Comparison Of The Different Types Of Fistulas According To Complexity

TYPE OF FISTULA	ANTERIOR	POSTERIOR	TOTAL
SIMPLE	7	14	21
COMPLEX	15	14	29
TOTAL	22	28	50

In 2011, The Standards Committee for the American Society of Colon and Rectal Surgeons (ASCRS) defined “simple” fistulas as those that are inter-sphincter or low trans-sphincter involving less than 30% of the external sphincter and published practice parameters for the management of perianal abscess and fistula-in-ano, “Complex” fistulas was defined as those with more muscle involvement, that is, the track crosses >30% to 50% of the external sphincter, or as recurrent

fistulas, and those associated with pre-existing fecal incontinence, inflammatory bowel disease, or radiation and the same was used for our study.^[25]

In this study out 50 cases of Fistula in ano 21 (42%) were simple fistulas and 29 (58%) were complex fistulas. Amongst Anterior Fistulas 7 (33.33%) simple and 15 (66.66%) complex fistulas, while in Posterior fistulas 14 (50%) simple and 14 (50%) complex fistulas. The incidence of complexity among anterior fistulas was 71.4 % while it was 50 % in posterior fistulas.

Goodsall's rule gives the clinician a clue to the internal opening and course of fistulas with anterior fistulas opening with a straight tract and posterior fistulas curving to open at the posterior midline. Patients were clinically examined and the external and internal openings were determined clinically as well as on MRI with MRI findings deemed to be the final determining factor for internal opening.

Fistulous tract with anterior external opening tends to follow radial course of tract because of radiating elastic septae of the conjoined longitudinal muscle attachments to the anoderm, and perianal skin contains finely lobulated fat, delicate branches of hemorrhoidal vessels, nerves, and lymphatics along with muscles such as ischio cavernosus, bulbospongiosus, and superficial transverse muscle. The tough perineal membrane does not allow any infection to penetrate deep perineal spaces, so the pus remains in the superficial perineal space (between subcutaneous tissue and perineal membrane); there is no chance for pus to communicate with any another potential spaces, so the fistulous tract having anterior external opening of any length will not follow the Goodsall's rule.

Goodsall's Rule					Total
	Following		Not Following		50
Type Of Fistula	Simple	Complex	Simple	Complex	
ANTERIOR	4	2	3	13	22
POSTERIOR	13	9	1	5	28
TOTAL	17	11	4	18	50

CONCLUSION:

Anal fistula is a common disease which is devastating to the patients and imposes challenges to the surgeon. Early diagnosis and appropriate management are the key to success. In this study we have attempted to compare and contrast the types of fistulas while at the same time try to validate the age-old axiom by Goodsall's rule.

The study revealed the following results:

- The majority of cases were seen in the 41-50 age group with a mean age of 37.4 years.
- The male to female ratio is also 9:1.
- Majority of anterior fistulas were found to not follow Goodsall's rule owing to anatomical oddities as opposed to posterior fistulas, which conform to Goodsall's rule.

However, for better results, a study with a larger sample size is advisable.

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