



## ROLE OF GOODSALL'S RULE IN PREDICTING THE TRACT OF FISTULA- IN- ANO.

### General Surgery

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### ABSTRACT

**Background:-** Fistula - in - Ano is seen quite frequently and the frequency virtually mirrors perianal – perirectal suppuration. The chronicity of the disease is associated with its annoying symptoms. Soiling, pruritis and recurrent suppuration renders an otherwise healthy and active person an economic burden, retraction from social engagements and he loses self confidence. This study was conducted in SGRRIM&HS, Dehradun with an aim to find out the role of Goodsall's Rule in predicting the tract of Fistula- in- Ano. **Materials & Methods:-** A prospective study was conducted for 1 and half year. All the patients diagnosed as Fistula - in- Ano who underwent surgical intervention during the study period were included in this study. All congenital fistulas, Malignancy, Inflammatory bowel disease patient, Incontinent patients, Patients with rectovaginal fistula & Cases unfit or refused for surgery were excluded from this study. Patients were evaluated by proper history, examination and necessary investigations as per proforma enclosed. Treatment was given as per standard treatment guidelines. The patients who were taken in study data was collected on standard performa. **Results:-** Majority of patients were male (80%) and age group belonging to 30-60 yrs (62.8%). Most common presenting complaint was perianal discharge followed by perianal pain. 71.4% cases followed Goodsall's rule. **Conclusion:-** Although it was inaccurate in 28.6% cases but still Goodsall's rule can be used as a simple guide in predicting the path of tract.

### KEYWORDS

Goodsall's Rule, Fistula- in- Ano, Fistulectomy

### INTRODUCTION

Fistula - in- Ano is an abnormal connection between the epithelialised surface of the anal canal or rectum and usually in continuity with one or more external openings in the perianal skin<sup>1</sup>. Fistula - in - Ano is seen quite frequently and the frequency virtually mirrors perianal – perirectal suppuration. The chronicity of the disease is associated with its annoying symptoms. Soiling, pruritis and recurrent suppuration renders an otherwise healthy and active person an economic burden, retraction from social engagements and he loses self confidence<sup>2</sup>.

Tuberculosis, Lymphogranulomainguinale, inflammatory bowel disease like Crohn's or ulcerating procto-colitis can also lead to development of anal fistula. Fistula has been reported following external injury or probing an abscess or low anal fistula. A colloid carcinoma of the rectum can manifest itself through an anal fistula<sup>3</sup>.

The Goodsall's rule can help to anticipate the anatomy of fistula- in- ano. The rule states that fistula with an external opening in anterior plane passing transversely through the center of the anus will follow a straight radial course to the dentate line. Fistula with their openings posterior to this line will follow a curved course to the posterior midline. Exceptions to this rule are external openings 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<sup>4</sup>. This study was conducted in SGRRIM&HS, Dehradun with an aim to find out the role of Goodsall's Rule in predicting the tract of Fistula- in- Ano.

### MATERIALS AND METHODS

This study was conducted at Shri Guru Ram Rai Institute of Medical & health Sciences, Dehradun for period of 18 months from November 2017 to May 2019. Prior to initiation of study institutional ethical committee approval and informed consent from the patient/legal guardian after the full explanation of research protocol was taken. All the patients diagnosed as Fistula - in- Ano who underwent surgical intervention during the study period were included in this study. All congenital fistulas, Malignancy, Inflammatory bowel disease patient, Incontinent patients, Patients with rectovaginal fistula & Cases unfit or refused for surgery were excluded from this study. All the patients admitted were evaluated for fistula by history, clinical examination and investigation. Patients of Fistula in Ano were classified as anterior and posterior as per imaginary transverse line passing from the centre of anus, in lithotomy position. The position of external opening of fistula tract is described in o'clock position, where anterior midline position is taken as 12 o'clock and posterior midline is taken as 6 o'clock position. General/spinal anaesthesia was given to all patients. Per-rectal

examination was done after anesthesia and attempt was made to palpate the fistula tract. After palpation of fistula tract, a saline soaked gauze piece was inserted into the anal canal and methylene blue dye was injected from the external opening of the fistula tract. Staining of the gauze piece confirmed the communication of the fistula tract with the anal canal. Probing was done after dye injection, patients were then subjected to surgery (fistulectomy). The patients who were taken in study data was collected on standard performa.

### OBSERVATIONS AND RESULTS

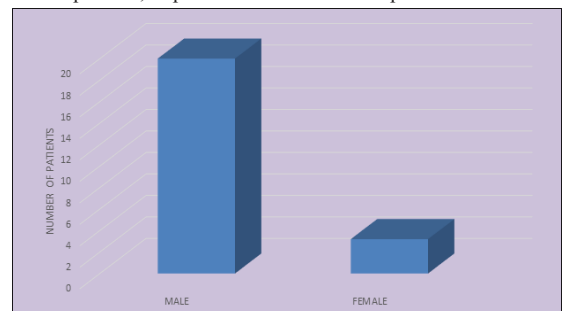
This study was done in Shri Guru Ram Rai Institute of Medical & Health Sciences Dehradun, on patients diagnosed as case of Fistula in ano in Department of General Surgery. It included 35 cases that were admitted from November 2017 to May 2019 in our institute with following observations:

This study included 35 patients, out of which 09(25.7%) patients were between the age 0-30 yrs, 22(62.8%) patients were between the age 30-60 yrs and 04(11.5%) patients were more than 60 yrs old.

**Table 1 – Age distribution of patients with Fistula-in-Ano.**

AGE IN YEARS	NO. OF PATIENTS	PERCENTAGE
0-30	09	25.7
30-60	22	62.8
>60	04	11.5
<b>TOTAL</b>	<b>35</b>	<b>100</b>

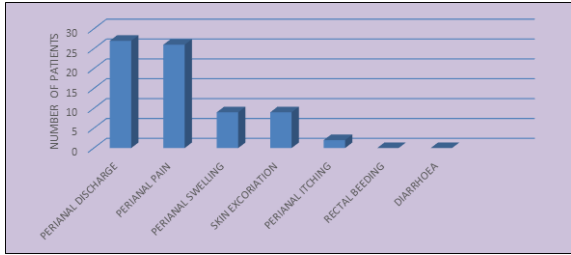
Out of 35 patients, 28 patients were male and 07 patients were female.



**Graph 1- Sex Wise Distribution In Fistula In Ano**

Out of 35 patients admitted, the most common symptom was perianal discharge seen in 27 patients followed by perianal pain seen in 26

patients and perianal swelling in 09 patients, perianal skin excoriation seen in 09 patients, perianal itching seen in 02 patients. Rectal bleeding and diarrhea was not seen in any patient.



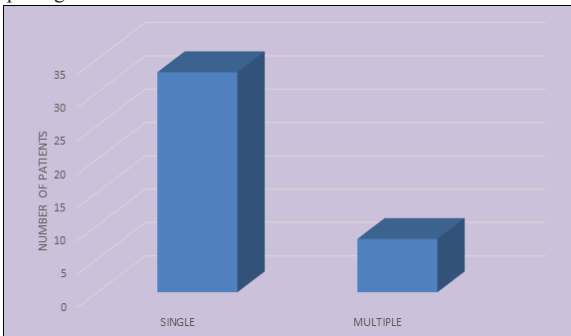
Graph 2- Symptoms of Patients Of Fistula In Ano

Out of 35 patients admitted, position of external opening of fistula tract was anterior to transverse line in 23(65%) patients. In 12(35%) patients position of external opening was posterior to transverse line.

Table 2 – Location Of External Opening

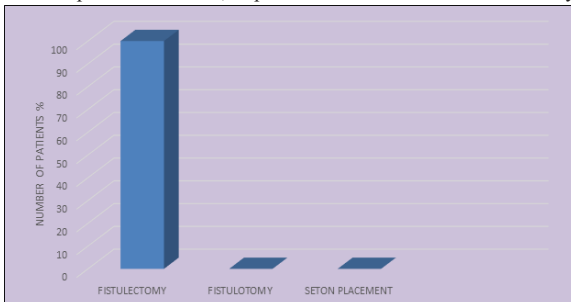
POSITION OF EXTERNAL OPENING OF FISTULA TRACT	NO. OF PATIENTS	PERCENTAGE
ANTERIOR TO TRANSVERSE LINE	23	65
POSTERIOR TO TRANSVERSE LINE	12	35
<b>TOTAL</b>	<b>35</b>	<b>100</b>

Out of 35 patients admitted, 33(94%) patients had single external opening of fistula tract and 2(6%) patients had multiple external openings of fistula tract.



Graph 3-Number of External Opening Of Fistula Tract

Out of 35 patients admitted, all patients were treated with fistulectomy



Graph 4- Treatment Given To Patients of Fistula In Ano

Out of 35 patients , 25 patients follow Goodsall's rule. 10 patients do not follow Goodsall's rule, with fistula with external opening anterior to transverse anal line had a curved tract and fistula with external opening posterior to transverse anal line did not open in midline posteriorly.

Table 3 - Fistula Following Goodsall's Rule

FOLLOW	NO. OF PATIENTS	PERCENTAGE
FOLLOW	25	71.4

DO NOT FOLLOW	10	28.6
<b>TOTAL</b>	<b>35</b>	<b>100</b>



Pic 1 – Showing Fistula tract with probe inside.

**DISCUSSION**

This study was conducted in the Department of Surgery at Shri Guru Ram Rai Institute of Health and Medical Sciences, Dehradun over a period of one and half year.

Out of 35 patients of Fistula in Ano in our study, maximum patients presented between the 31- 60 years age group and only 4 were in the age group of more than 60 years. Most common age of presentation in patients of Fistula in Ano in our study is 31-60 years. In a study by Vasilevsky et al, most patients with an anal fistula present in the third or fourth decade of life and anal fistulas were uncommon after the age of 60 years<sup>5</sup>.

In our study of patients of Fistula in Ano there is a male predominance with a ratio of 4:1. As per study done by Adams et al<sup>6</sup>, there is a male dominance in almost every reported series. In a study done by Aniet et al, the male-female ratio was 8:1.

Out of 35 patients of Fistula in Ano in our study, maximum number of patients presented with history of perianal discharge was seen in 77% patients followed by history of anal pain was seen in 74% patients. This is in accordance with the study conducted by Vasilevsky and Gordon, recorded a history of perianal discharge in 65% patients<sup>7</sup> & Saxena P et al, recorded a history of perianal pain in 82.2% patients<sup>8</sup>.

Out of 35 patients of Fistula in Ano in our study, single external opening of fistula tract was seen in 33(94%) patients of Fistula in Ano and multiple external openings of fistula tract was seen in 2(6%) patients of Fistula in Ano. In a study done by Saxena P et al, multiple external openings of fistula tract was seen in 14.4% patients of Fistula in Ano<sup>8</sup>.

Out of 35 patients of Fistula in Ano in our study, 71.4% follow Goodsall's rule and 28.6 % patients do not follow Goodsall's rule. As per study of Jayarajah U, et al. the overall predictive value of Goodsall's rule was 78.3%<sup>9</sup>. In a study done by Gunawardhana and Deen, showed that 59% of the cases of Fistula in Ano followed Goodsall's rule<sup>10</sup>.

**CONCLUSION**

1. Majority of patients of Fistula in Ano belonged to age group of 31-60 years which accounts for 22 (62.8%) patients.
2. The disease Fistula in Ano is more common in males. Male: female ratio in patients of Fistula in Ano was 4: 1.
3. The most common presenting symptoms were perianal discharge in 27(77%) and perianal pain in 26(74%) patients of Fistula in Ano.
4. Single external opening of fistula tract was seen in 33(94%) and multiple external openings of fistula tract was seen in 2(6%) patients of Fistula in Ano.
5. In our study 25 patients(71.4%) of Fistula in Ano followed Goodsall's rule and 10 patients(28.6%) of Fistula in Ano did not follow Goodsall's rule.

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