# **Original Research Article**

DOI: http://dx.doi.org/10.18203/2349-2902.isj20203073

# Clinical and diagnostic profile of patients with anal fistula: a cross sectional study from Vilasrao Deshmukh Government Institute of Medical Sciences, Latur, Maharashtra

Praffula V. Mahakalkar<sup>1</sup>, Ganesh Swami<sup>1\*</sup>, Halnikar Chandrashekhar S.<sup>1</sup>, Anant A. Takalkar<sup>2</sup>

Received: 19 June 2020 Revised: 06 July 2020 Accepted: 08 July 2020

# \*Correspondence: Dr. Ganesh Swami,

E-mail: swamiganesh34@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

# **ABSTRACT**

**Background:** Anal fistulas are one of the commonest causes for a persistent discharge seropurulent in nature that irritates the skin in the neighbourhood and leads to discomfort. Fistula-in-ano is seen quite frequently in perirectal perianal suppuration. The objective of this study to study the clinical profile and diagnosis of anal fistula at surgical OPD of VDGIMS.

**Methods:** The present cross-sectional observational study was carried out in patients with fistula-in-ano admitted at surgical department of VDGIMS, Latur during the period of 2017-19 in 50 diagnosed patients. Data was analysed by using SPSS 24.0 version IBM USA.

**Results:** Majority of the patients with anal fistula were from 41-50 years age group i.e. 15 (30%) and males were predominantly affected 40 (80%) compared to females i.e. 10 (20%). Male to female ratio was 4:1. Perianal discomfort was the commonest symptom in all patients i.e. 100%. It is followed by perianal discharge complained by 54% and perianal itching in 38% cases. The anterior position of external opening is found to be significant (p<0.05). Fistulogram showed external opening in all patients i.e. 50 cases whereas internal opening in 46 (92%) cases. Findings of MRI revealed that anal fistula was intra sphincteric in 28 cases i.e. 56%, extra sphincteric in 2 cases i.e. 4% and trans sphincteric in 20 cases i.e. 40%.

**Conclusions:** Commonest age group affected in our study was 40-50 years with male predominance. Perianal discomfort and discharge were the commonest symptom. *E. coli* was the predominant organism isolated. Fistulogram and MRI is useful in detecting the aetiology of fistula in ano.

Keywords: Fistula in ano, Clinical presentation, Diagnosis

# INTRODUCTION

Anal fistulas are one of the commonest causes for a persistent discharge seropurulent in nature that irritates the skin in the neighbourhood and leads to discomfort. Fistula-in-ano is seen quite frequently in perirectal perianal suppuration. An abnormal communication lined by granulation tissue between the anal canal and the skin

leading to chronic inflammation. These fistulas are developed because of these chronic abscesses.<sup>1</sup>

Understanding of the anatomy of the anal canal and the mechanism of continence of rectum and anal canal has allowed the surgeon to dealing with spastic anorectal ring intact without any incontinence and eradicating the disease. Anal fistula is a painless condition, although

<sup>&</sup>lt;sup>1</sup>Department of General Surgery, Vilasrao Deshmukh Government Institute of Medical Sciences (VDGIMS), Latur, Maharashtra, India

<sup>&</sup>lt;sup>2</sup>Department of Community Medicine, MIMSR Medical College and YCRH, Latur, Maharashtra, India

cessation of discharge drainage leads to pus accumulation and recurrent abscesses. Pain is relieved as the abscess bursts, which gives immediate relief. Itching and soreness of perianal skin are common due to pruritus resulting from the moist inflammatory conditions of the skin.<sup>2</sup> The fistulous tracts traditionally use to keep open in part or whole, in one or more stages and let the wound heal by secondary intention.<sup>3</sup>

Fistula-in-ano rarely intends to heal and achieve a cure hence they require surgical management.<sup>4</sup> Surgical techniques like fistulotomy, fistulectomy, primary closure after excision of tract and staged operations have rendered the postoperative period uneventful, short and steep fall in recurrence rate. Careful discussion with the patient regarding options and potential risks should be informed pre- operatively with concentration on the risk of recurrence balanced against risk of incontinence.<sup>5</sup>

Usually patient gives a history of recurrent abscess that ruptured spontaneously or was surgically drained that leads to pink or red elevation exuding pus or it may have healed.<sup>6</sup> Usually the recurrence is an undiagnosed fistula present at the time of abscess drainage whose incidence is almost 18 to 95 percent.

Internal openings and fistula tracks are difficult to demonstrate with safety during acute phase of inflammation and attempts in doing so may result in false passages or openings. Ischiorectal and Inter sphincteric abscesses they have been reported to have a higher risk of recurrence than perianal abscess.<sup>6</sup>

So, the study is planned with the objective to study the clinical profile and diagnosis of anal fistula at surgical OPD of our tertiary care centre.

# **METHODS**

The present cross-sectional observational study was carried out in patients with fistula-in-ano admitted at surgical department of VDGIMS, Latur during the period of January 2018 to 2019. Study was initiated after obtaining permission from ethical committee of VDGIMS and consent from patients. A sample size of 50 was calculated for the study.

#### Inclusion criteria

Inclusion criteria were the patients who are clinically diagnosed as fistula-in-ano and admitted to the surgical wards in this hospital and willing to participate in the study.

#### Exclusion criteria

Exclusion criteria were all fistulas due to perineal injuries are excluded. All congenital fistulas are excluded from the study.

After obtaining the consent, details of patient were recorded like age, gender, complaints etc. Detailed history of patients was noted and they were thoroughly examined. Digital rectal examination was performed for each patient. Magnetic resonance imaging findings were recorded. After appropriate surgical intervention, patients further observed for any postoperative were Biopsy complications. sample sent was histopathological examination and the findings were noted.

The position of internal opening was noted and the fistulae were classified in relation to anorectal ring. Investigations such as routine hemogram blood sugar, stool examination, culture and sensitivity, and X-ray chest was done. ELISA for HIV 1 and 2 was done for all cases to rule out immunosuppression due to HIV infection.

# Statistical analysis

Data was collected by using a structure proforma. Data entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA. Qualitative data was expressed in terms of proportions Quantitative data was expressed in terms of Mean and Standard deviation. A p value of <0.05 was considered as statistically significant whereas a p value <0.001 was considered as highly significant.

# **RESULTS**

We included total 50 subjects fulfilling our eligibility criteria. Majority of the patients with anal fistula were from 41-50 years age group i.e. 15 (30%), followed by 11 (22%) from 21-30 years age group. Of these 50 patients, males were predominantly affected 40 (80%) compared to females i.e., 10 (20%) (Table 1).

Table 1: Distribution of study population according to age and gender.

Study population		Frequency	Percent
Age in years	<20	8	16
	21-30	11	22
	31-40	7	14
	41-50	15	30
	>50	9	18
Sex	Male	40	80
	Female	10	20

Perianal discomfort was the commonest symptom in all patients i.e. 100%. It is followed by perianal discharge complained by 54% and perianal itching in 38% cases (Figure 1).

Per rectal examination revealed presence of external opening in all 50 patients, whereas internal opening in 46 i.e. 92% of cases and induration in 34 i.e. 68% cases (Table 2).

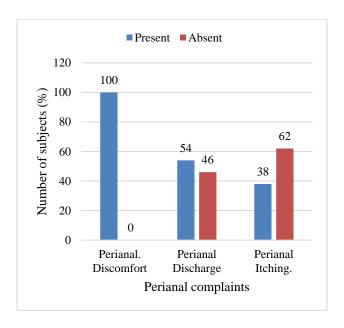


Figure 1: Distribution of study population according to complaints.

External opening position of fistula revealed anterior position in 37 i.e. 74% cases and posterior position in 13 (26%) cases. So, the anterior position was a significant finding in our study (p<0.05) (Table 3).

It shows that in more than half cases, i.e. 58%, *E. coli* was the predominant organism to be isolated. It is followed by klebsiella in 26% and 8% each of *Acinetobacter* and *Pseudomonas* (Figure 2).

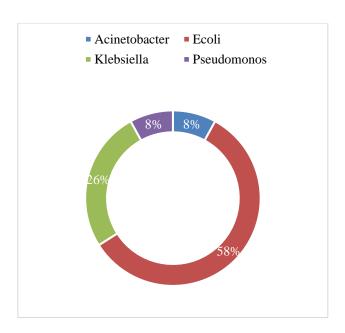


Figure 2: Distribution according to culture sensitivity report.

Fistulogram showed external opening in all patients i.e., 50 cases whereas internal opening in 46 (92%) cases (Table 4).

Findings of MRI revealed that anal fistula was intra sphincteric in 28 cases i.e. 56%, extra sphincteric in 2 cases i.e. 4% and trans sphincteric in 20 cases i.e. 40% (Table 5).

Table 2: Per rectal examination findings.

Findings		Present	Present		Absent	
		Frequency	Percent	Frequency	Percent	
Per rectal examinations	External opening	50	100.0	0	0.0	
	Internal opening	46	92.0	4	8.0	
	Induration	34	68.0	16	32.0	

Table 3: Distribution according to external opening position of fistula.

Distribution		Yes	Yes		No	
		Frequency	Percent	Frequency	Percent	
Position of external	Anterior	37	74.0	13	26.0	
opening	Posterior	13	26.0	13	26.0	

Chi square test - 4.37, p=0.032 (<0.05), significant.

**Table 4: Findings of fistulogram.** 

Findings		Yes		No	
		Frequency	Percent	Frequency	Percent
Fistulogram	External opening	50	100.0	0	0.0
	Internal opening	46	92.0	4	8.0

Table 5: Findings of MRI.

Findin	gs	Frequency	Percent
	Extra sphincteric (high anal)	1	2.0
	Extra sphincteric (low anal)	1	2.0
MRI	Inter sphincteric	28	56.0
WIKI	Trans sphincteric (high anal)	4	8.0
	Trans sphincteric (low anal)	16	32.0
	Total	50	100.0

# **DISCUSSION**

#### Age and gender

Majority of the patients with anal fistula were from 41-50 years age group i.e. 15 (30%) and males were predominantly affected 40 (80%) compared to females i.e. 10 (20%). Male to female ratio was 4:1.

Agarwal et al reported that out of 25 patients of anorectal abscess, there were 23 males 92% and two females 8%. The most common age group was 21-30 years with eight patients 32%, followed by five patients 20% in the age group of 31 to 40 years. Bhargav et al also found that out of 225 patients, maximum 40% number of patients were encountered in 41-50 years and 80% were males and 20% were females. Male to female ratio was 4:1 which is exactly similar to our study findings. Whereas Gorden et al and Akhtar et al in their studies observed a slightly higher M:F ratio of 5.66:1.9,10

These findings were consistent with the findings of Corman et al who also reported maximum incidence 42% in 41-50 years age group with mean age of 40.5 years. Hancock et al and Corman et al noted maximum incidence (58-65% respectively) in 31-50 years age group with mean age of 42.7 and 38.5 years respectively. 12,11

# Presentation

Perianal discomfort was the commonest symptom in all patients i.e. 100%. It is followed by perianal discharge complained by 54% and perianal itching in 38% cases.

Bhargav et al reported that discharge from opening was most common presentation among the patients of fistula of ano followed by pain around anus 73.3%, swelling around anus 45.3%, itching around anus 17.3% and constipation 13.3%. Fever 9.3% and bleeding per rectum 2.6% were the least frequent complaints of the patients.<sup>8</sup> Memon et al also reported discharge from opening 90%, pain around anus 76.7% and swelling around anus 53.3% as the most frequent complaints of patients of fistula in ano.<sup>13</sup> Corman et al also reported discharge from opening

to be the chief complaint 93.8% of patients with fistula in ano followed by pain around anus 79.8% and swelling around anus (56.7%).<sup>11</sup>

# Fistula openings

Per rectal examination revealed presence of external opening in all 50 patients, whereas internal opening in 46 i.e. 92% of cases and induration in 34 i.e. 68% cases. The anterior position was a significant finding in our study (p<0.05).

Bhargav et al reported 80% of the patients had single external opening and 20% had multiple external openings. Reported single external opening in 82.67% and multiple external openings in 17.33% of the patients. Buchanan et al observed single and multiple external openings in 89.78% and 10.12% respectively. Buchanan et al observed single and multiple external openings in 89.78% and 10.12% respectively.

# Clinical and MRI diagnosis

Fistulogram showed external opening in all patients i.e. 50 cases whereas internal opening in 46 (92%) cases. Findings of MRI revealed that anal fistula was intra sphincteric in 28 cases i.e. 56%, extra sphincteric in 2 cases i.e. 4% and trans sphincteric in 20 cases i.e. 40%.

Bhargav et al stated in his study that all the patients underwent digital rectal examination and magnetic resonance imaging which revealed that 82.67% of fistulae were low viz a viz 17.33% high. 47.1% of fistulae were inter-sphincteric, 35.5% trans-sphincteric, 9.8% suprasphincteric and 7.6% were extra-sphincteric.

Javitt et al reported that 80% of fistulae were low and 20% high. 52% of fistulae were inter sphincteric followed by trans sphincteric 33.3%, supra sphincteric 12% and extra sphincteric 2.7%. <sup>16</sup> MRI grading of perianal fistulae has been described as grade 1 simple linear inter sphincteric fistula; grade 2 inter sphincteric fistula with abscess or secondary tract; grade 3 trans sphincteric fistula; grade 4 trans sphincteric fistula with abscess or secondary tract within the ischiorectal fossa and grade 5 supra-levator and trans-levator disease. <sup>17,18</sup>

# CONCLUSION

Commonest age group affected in our study was 40-50 years with male predominance. Perianal discomfort and discharge were the commonest symptom. *E. coli* was the predominant organism isolated. Fistulogram and MRI is useful in detecting the aetiology of fistula in ano.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

# **REFERENCES**

- 1. Goligher JC, Duthie HL, Nixon HH. Fistula-in-ano. Chapter-7, Surgery of the anus, rectum and colon. 4th edn., London: Bailliere Tindall; 1980: 163-199.
- Satyaprakash, Lakshmiratan V, Gajendran V. Fistula-in-ano treatment by fistulectomy, primary closure and reconstitution. Aust NZJ Surg. 1985;55:23-7.
- Schuster MM, Ratych RE. Ano rectal disease. Chapter-94, Bockus gastroenterology. 5th edn., Vol.2, Williams S. Hanbrich, Fenton Schaffner, Philadelphia: W.B. Saunders Company; 1995: 1773-1789.
- Choen SF, Williams NS. The anus and anal canal. Chapter-72, Bailey and Love's short practice of surgery. 24th end., RCG Russel, Norman S. Williams, Christoper JK. Bustrode. London: Hodder Arnold; 2004: 1265-1268.
- Nicholls RJ. Anal fistula. Br J Surg. 1992;79:197-205
- Russel TR. Anorectum Chapter-32, Current surgical diagnosis and treatment. 10th edn., Lawrence W. Way, A lange medical book. London: Prentice -Hall International Inc; 1994: 693-711.
- 7. Agarwal A, Bhat SK, Kumar V, Sodhi BS. Clinical Presentation and Management of Anorectal Abscess and Fistula-in-ano. Int J Scientific Study. 2017;5(5):54-5.
- 8. Bhargava, Sharma R, Kataria D, Malviya S, Ajay. Retrospective and prospective study of clinical profile of fistula in ano. Int J Surg Sci. 2020;4:7-9.
- 9. Gordon PH. Principles and Practice of Surgery for the Colon, Rectum and Anus. Informa Health Care. 2002: 245.
- 10. Akhtar M. Fistula in Ano-An Overview. JIMSA. 2012;25(1):53-5.

- 11. Corman ML, Fistula A. Colon and Rectal Surgery. 5th ed. Philadelphia, Pa: Lippincott Williams and Wilkins, Chapter 11; 2005.
- 12. Hancock BD. ABC of colorectal diseases. Anal fissures and fistulas. BMJ. 1992;304(6831):904-7.
- Memon AA, Murtaza G, Azami R, Zafar H, Chawla T, Laghari AA. Treatment of complex fistula in ano with cable-tie seton: a prospective case series. ISRN Surg. 2011;2011:636952.
- 14. Choen S, Burnett S, Bartram CI, Nicholls RJ. Comparison between anal endosonography and digital examination in the evaluation of anal fistulae. Br J Surg. 1991;78:445-7.
- 15. Buchanan G, Halligan S, Williams A, Richard C, Cohen G, Tarroni D, et al. Effect of MRI on clinical outcome of recurrent fistula-in-ano. Lancet. 2002;360:1661-2.
- 16. Javitt FMC, Lovecchio JL, Javors B, Naidich JB, McKinley M, Stein HL. The value of MRI in evaluating perirectal and pelvic disease. Magn Reson Imaging. 1987;5:371-80.
- 17. McCourtney JS, Finlay IG. Setons in the surgical management of fistula in ano. Br J Surg. 1995;82(4):448-52.
- 18. Ramanujam PS, Prasad ML, Abcarian H. The role of seton in fistulotomy of the anus. Surg Gynecol Obstet. 1983;157(5):419-22.

Cite this article as: Mahakalkar PV, Swami G, Halnikar CS, Takalkar AA. Clinical and diagnostic profile of patients with anal fistula: a cross sectional study from Vilasrao Deshmukh Government Institute of Medical Sciences, Latur, Maharashtra. Int Surg J 2020;7:2494-8.