



## PERIANAL FISTULAE: CLINICAL EXPERIENCE IN TERTIARY HEALTH CARE HOSPITAL

Daniyal Javed<sup>1\*</sup>, M Imran Anwar<sup>2</sup>, Muhammad Hamza Laique<sup>3</sup>, Muhammad Rizwan<sup>4</sup>,  
Muhammad Zain ul Abid<sup>5</sup>, Muhammad Ali Askari<sup>6</sup>

<sup>1</sup>\*Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan

<sup>2</sup>Professor and Head of Department, General Surgery and Surgical Oncology Department, Sheikh Zayed Hospital, Lahore Pakistan

<sup>3</sup>Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan

<sup>4</sup>Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan

<sup>5</sup>Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan

<sup>6</sup>Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan

**\*Corresponding Author:** Daniyal Javed

\*Trainee Registrar, Sheikh Zayed Hospital, Lahore Pakistan. Email: daniyaljaved@hotmail.co.uk

### Abstract:

**Introduction:** Perianal fistulae are the granulation tract between anus or rectum and overlying skin with incidence of 9/100,000. It mostly affects the males with male to female ratio of 1.8:1. Mean age of presentation is 41.6+/- 11.4 years. Causes of perianal fistulae mainly divided in to cryptoglandular and non cryptoglandular causes. The basic pathophysiology of perianal fistulae formation was explained by cryptoglandular hypothesis. Park classification is commonly used to stratify perianal fistulae. Its diagnosis is mainly clinical but MRI and endoanal ultrasound aids in diagnosis and formulation of treatment logarithm. Multiple treatment options are available for the management of perianal fistulae but results are disappointing because it has high reoccurrence rate. Aim of this study was to assess the clinical presentation and treatment given to patient.

**Material And Method:** Cross-sectional, observational retrospective study was conducted on 75 patients in general surgery and surgical oncology unit 2 of Sheikh Zayed Hospital in Lahore. The study lasted from January 27, 2022 to April 27, 2023. The non- probability, convenience sampling technique was used. Inclusion criteria include all patients with perianal symptoms and external perianal opening. Exclusion criteria include perianal fistulae due to secondary causes and recurrent perianal fistulae.

**Results:** In this study most of the patients were male (89.33%). With male to female ratio of 8.37:1. Mean age of presentation was 42.33+/- 12 years. Most common presentation of peri-anal fistulae was perianal discharge (75%) followed by peri-anal pain (60%). Most of the openings were located on posterior side (77%). Most common procedure done was fistulotomy (67%) followed by setone placement (20%). About 76% of the patients had single per-anal external opening.

**Conclusion:** Fistulae in ano is the most common pathology of the lower GI tract. That has a devastating impact on patient's mental and social health. But early diagnosis and prompt treatment help reduce its complications.

**Key words:** Perianal fistulae, clinical presentation, fistulotomy , fistulectomy.

## **INTRODUCTION:**

Perianal fistulae are the granulation tract between the anus or rectum and the overlying skin(1). It is one of the most common colorectal pathologies that significantly affects patient quality of life, with an incidence of 9/100,000(2). Most of the patients are male, with a male-to-female ratio of 1.8:1. The mean age of presentation is 41.6 +/- 11.4 years(3). Broadly, the causes of perianal fistulae are divided into two types: cryptoglandular (90–95%) and non-cryptoglandular (5–10%). Most of these fistulae developed after an anal abscess, either after inadequate drainage or spontaneous rupture. Other pathologies like tuberculosis, ulcerative colitis, Crohn's disease, actinomycosis, foreign bodies, and underlying carcinomas can also cause perianal fistulae(4).

The basic pathophysiology of perianal fistulae formation was explained by two French anatomists in 1884 by giving the cryptoglandular hypothesis. According to this hypothesis, there are small glands between internal anal sphincters that run through the rectum. Infection of this gland will result in perianal fistulae(5).

In the 900s, David Henry Goodsall gave his concept about the relationship between the course of perianal fistulae and the location of external openings(6). According to him, perianal fistulae on the anterior side of the external opening were associated with a fistula tract running in a radial line to the internal opening, while perianal fistulae with a posterior external opening would result in a fistulous tract always ending in the posterior midline. In 1992, Cirocco tested the accuracy of this rule(7).

Death due to perianal fistulae is very rare, but it causes great socio-psychological trauma to the patient. The majority of the patients complain of perianal discharge that can be smelly, perianal pain, anal purities, and perianal sepsis(8). Today, the PARK's classification of peri-anal fistulae is mainly used to classify these fistulae into inter-sphincteric, trans-sphincteric, supra- sphincteric, and extra-sphincteric fistulae(9). But for the surgical decision, most surgeons use simple classification by dividing peri-anal fistulae into low (involving the lower 1/3 of the anal- sphincteric complex) and high fistulae (involving the upper 2/3 of the anal-sphincteric complex) because the treatment modality to be given depends upon the location of the fistulae(10).

The diagnosis of perianal fistulae was based mainly on clinical examination(11). Which include palpation of the fistulous tract and examination of the external opening. MRI pelvis and endoanal ultrasound also aid in the diagnosis of perianal fistulae and the formation of treatment logarithms(12). The main aim of the surgical treatment of fistulae in ano is to permanently remove the inflammatory process without affecting the anal tone(13). Many of the low-lying fistulae are treated with fistulotomy, with a success rate of 80–100%. Standard treatment for high peri-anal fistulae is still unknown(14). Many methods have been introduced to treat high fistulae, including seton placement, VAFT, lift procedures, and flap procedures, but the results are disappointing(15). But the final decision about the surgical treatment option depends on the anatomy of the perianal fistulae. Unfortunately, this disease has a high reoccurrence rate, irrespective of the surgical option used(16). Besides the most common pathology of the peri-anal region, there is a lack of research on the prevalence, pathogenesis, and clinical presentation of perianal fistulae. Hence, this study was conducted to assess the clinical presentation and treatment given to patients.

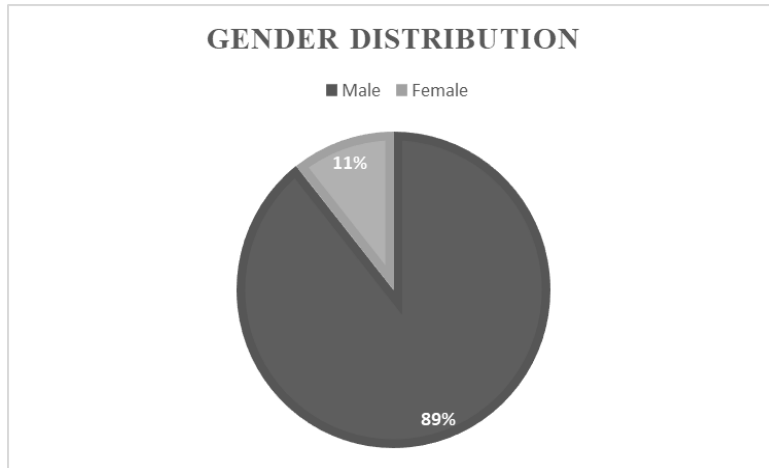
## **MATERIAL AND METHOD:**

The present cross-sectional, observational retrospective study was conducted on 75 patients who presented with perianal complaints in the outpatient department and were admitted for operation in general surgery and surgical oncology unit 2 of Sheikh Zayed Hospital in Lahore. The study lasted from January 27, 2022 to April 27, 2023. The non-probability, convenience sampling technique was used. All those patients who meet the inclusion criteria, which include identification of the specific perianal pathology, i.e., the external opening, any perianal discharge history of discomfort in the perianal region, any patient with a past history of perianal abscess, any patient with a recurrent

perianal fistula after previous fistula surgery, and the fistulous tract secondary to the introduction of a foreign body, were examined in detail, and the required investigations were done. Appropriate treatment was given to each patient. Intraoperative findings were noted. All the data was compiled in MS Word and checked for completeness and correctness.

**RESULTS:**

In this study most of the patients were male (89.33%) as compared to females (10.6%). With male to female ratio of 8.37:1. Mean age of presentation was 42.33+/- 12 years.



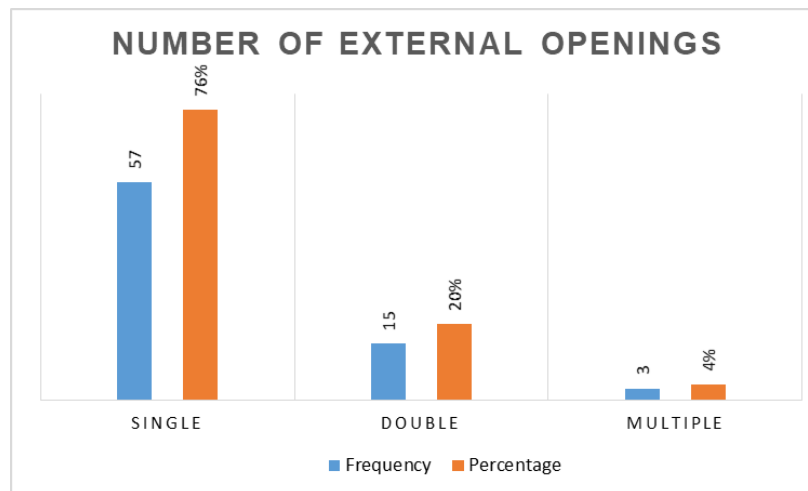
**Fig. 1.1:** Gender Distribution

Most common presentation of peri-anal fistulae was perianal discharge (75%) followed by peri-anal pain (60%). Whereas least common presentation was peri-anal irritation (11%). Most of the openings were located on posterior side (77%) and 23% were present on anterior site. Most common procedure done was fistulotomy (67%) followed by setone placement (20%) whereas least common procedure was VAFT (3%).

<i>Perianal Fistula</i>		
Clinical Presentation		
Presentation	Frequency	Percentage
Pain	45	60%
Discharge	56	75%
Swelling	19	25%
Perianal Irritation	8	11%
Site of External openings		
Site	Frequency	Percentage
Anterior	17	23%
Posterior	58	77%
Treatment Modalities		
Types	Frequency	Percentage
Fistulotomy	50	67%
Fistulectomy	9	12%
Seton Placement	15	20%
VAFT	1	1%
Types of Perianal fistulas		
Types	Frequency	Percentage
High	11	14%
Low	64	86%

**Fig. 1.2:** Demographic features and Treatment modalities

About 76% of the patients had single per-anal external opening whereas 20% had double external opening and 4% had multiple external openings.



**Fig 1.3:** Number of external openings

### DISCUSSION:

In our study, the mean age of presentation was 42.33 +/- 12 years. In the research of Yadu S et al., similar findings were seen(3). A study conducted by Sidhdharth R et al. also showed the most common age of presentation was between 30 and 40 years(17). Similarly, research conducted on 445 patients showed the mean age of presentation was 37 years. It further showed that patients < 40 had a higher risk of developing perianal fistulous disease than those >40(18). In our research, the most affected subjects were males (89.33% with a male-to-female ratio of 8.37:1. These results were similar to those of a study conducted by Yadu S et al., Sidhdharth R et al., and Omar M K et al(3, 17, 18). The presentation of peri-anal fistulae at young ages might be due to increased smoking habits, hairy bodies, and sexually active behaviour in young adults. Whereas male predominance might be due to hormonal differences or a strong anal tone in male patients.

In this research, the most common mode of presentation of perianal fistulae was perianal discharge (75%), followed by peri-anal pain (60%), perianal swelling (19%), and irritation (8%). These results were comparable with the results of the study by Yadu S et al(3). Similarly, Sidhdharth R et al. showed that 70% of patients presented with a complaint of perianal discharge, while 72% of patients had a complaint of perianal pain(17). These findings were also consistent with the study by Kumar et al., which stressed that all the patients presented with perianal fistulae had external openings and perianal discharge(19). These findings were supportive of the cryptoglybular abscess theory of fistulae formation. As most of the patients with perianal fistulae had an underlying cryptoglandular abscess that could be the cause of perianal pain and most of the patients with small perianal abscesses were mostly treated with empirical antibiotic therapies, the emergence of antibiotic resistance and the incomplete course of these antibiotic therapies resulted in the drainage of the cryptoglandular abscess to the external skin through an opening, and this might be a possible cause as most of the patients with perianal fistulae presented with perianal discharge.

About 76% of the patients had a single perianal external opening, 20% had a double external opening, and only 4 patients had more than 2 external openings. These results were comparable with those of Yadu S et al., who showed 76% of patients had a single external opening, 10% had a double external opening, and 2% had multiple external openings(3). Similar results were seen in a study conducted by Sidhdharth R. et al(17).

In the present study, most of the fistulae had an external opening on the posterior side (77%), and 23% of the patients had fistulae on the anterior side. These results were in accordance with Yadu S.

et al(3). Similar results were seen by Siddhartha R et al., showing 80% of patients had posterior openings and 20% had anterior openings. 77% of patients had a posterior opening, 24% had an anterior opening, and 10% had a lateral opening(17). These results were also in accordance with our study. A more prevalent posterior opening might be due to decreased elastic tissue in that area, so constipation could be the possible cause that leads to perianal fissure, and chronic perianal fissure produces perianal abscess, which results in perianal fistulae formation.

Just like Yadu S et al., Siddhartha R et al., and Kumar et al., most of the patients presented with perianal fistulae were low-lying(17, 19). Similarly, in our research, 70% of the patients had low-lying fistulae, and 30% of the patients had high fistulae(3). As most of the fistulae were formed after subcutaneous perianal abscess formation due to blockage of the anal gland, this might be the possible cause of the high prevalence of low-lying fistulae.

In our study, 67% of the patients were treated with fistulotomies, whereas 20% of the patients required setone placement, only 12% of the patients were managed with fistulectomy, and 3% of patients underwent video-assisted fistulae treatment. In contrast to Vadu S et al., 78% of patients were managed by fistulectomy, 14% were treated by fistulotomy, 2% underwent fistulectomy with primary closure, and 4% were treated with setone placement(3). Our study also shows contrast with the results of the study conducted by Siddhartha R et al., in which 84% of patients underwent fistulectomy, another 6% of patients required fistulotomy, and another 10% were managed by fistulectomy with fissurectomy and sphinctrotomy(17). In contrast with Kumar et al., fistulectomy was planned in 68%, fistulotomy in 28%, and seton placement in 4% of subjects(19).

## CONCLUSION:

Fistulae in ano is the most common pathology of the lower GI tract. These lesions are most commonly present in young male adults and mainly occur after an acute perianal abscess or incomplete drainage of the abscess. That has a devastating impact on patient's mental and social health. But early diagnosis and prompt treatment help reduce its complications.

## REFERENCES:

1. Göttgens K. Current status and innovations in treatment of perianal and rectovaginal fistulas: are we still in the dark? 2015.
2. Cheung XC, Fahey T, Rogers AC, Pemberton JH, Kavanagh DO. Surgical management of idiopathic perianal fistulas: a systematic review and meta-analysis. *Digestive Surgery*. 2021;38(2):104-19.
3. Yadu S, Toppo A. Clinical presentation and outcome of fistula in ano cases. *International Surgery Journal*. 2018;5(9):3006-10.
4. Drager LF, Andrade MNB, Conceição SA, Cunha-Melo JR. Perianal fistula: retrospective study of surgical treatment of 241 cases. *Acta Cirurgica Brasileira*. 1998; 13:106-9.
5. Cadeddu F, Salis F, Lisi G, Ciangola I, Milito G. Complex anal fistula remains a challenge for colorectal surgeon. *International journal of colorectal disease*. 2015; 30:595-603.
6. Cirocco WC, Reilly JC. Challenging the predictive accuracy of Goodsall's rule for anal fistulas. *Diseases of the colon & rectum*. 1992; 35:537-42.
7. D'Hoore A, Penninckx F. The pathology of complex fistula in ano. *Acta Chirurgica Belgica*. 2000;100(3):111-4.
8. Kapoor S, Kumar A, Rally S, Kapoor V, Sandhu AS. Study of Clinical Presentation and Management of Patients Presenting With Fistula-in-ano. *IOSR-JDMS*. 2018;17(1):39-46.
9. Idris SA, Abdalla A, Hamza A. Classification of fistula in ano. *Med J*. 2015; 2:99-102.
10. Göttgens K, Smeets R, Stassen L, Beets G, Breukink S. Systematic review and meta-analysis of surgical interventions for high cryptoglandular perianal fistula. *International journal of colorectal disease*. 2015; 30:583-93.
11. Van Koperen P, Horsthuis K, Bemelman W, Stoker J, Slors J. Perianal fistulas: developments in the classification and diagnostic techniques, and a new treatment strategy. *Ned Tijdschr Geneeskd*.

- 2008;152(51-52):2774-80.
12. Siddiqui MR, Ashrafian H, Tozer P, Daulatzai N, Burling D, Hart A, et al. A diagnostic accuracy meta-analysis of endoanal ultrasound and MRI for perianal fistula assessment. *Diseases of the colon & rectum*. 2012;55(5):576-85.
  13. Jacob TJ, Perakath B, Keighley MR. Surgical intervention for anorectal fistula. *Cochrane Database of Systematic Reviews*. 2010(5).
  14. Göttgens K, Janssen P, Heemskerk J, Van Dielen F, Konsten J, Lettinga T, et al. Long-term outcome of low perianal fistulas treated by fistulotomy: a multicenter study. *International journal of colorectal disease*. 2015; 30:213-9.
  15. Van Koperen PJ, Wind J, Bemelman WA, Bakx R, Reitsma JB, Slors FJ. Long-term functional outcome and risk factors for recurrence after surgical treatment for low and high perianal fistulas of cryptoglandular origin. *Diseases of the colon & rectum*. 2008;51(10):1475- 81.
  16. Kotze PG, Shen B, Lightner A, Yamamoto T, Spinelli A, Ghosh S, et al. Modern management of perianal fistulas in Crohn's disease: future directions. *Gut*. 2018;67(6):1181-94.
  17. Siddharth R, Kumar GA, Sreedhar S. Clinical study of fistula in ano. *Journal of Evolution of Medical and Dental Sciences*. 2015;4(86):15082-8.
  18. Khalil OM, Al Ozaibi L, Kaiyasah HM, Hejazi NA. Incidence and risk factors affecting development of perianal fistulas after drainage of perianal abscesses. *Dubai Medical Journal*. 2021;4(1):43-6.
  19. Veerendra Kumar H. A Clinico-Pathological study of Fistula in ANO: RGUHS; 2010.