

**CLASSIFICATION OF FISTULA IN ANO- A RESEARCH ARTICLE****DR GANAPATHI RAO<sup>1</sup>, DR SUBHOD KAMTHIKAR<sup>2</sup>, DR CHANDRAKANTH HALLI<sup>3</sup>**

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**Abstract**

*Background:* Classification of perianal fistulae and knowledge of its anatomy are particularly important in determining the appropriate medical and surgical therapy.

*Aim:* To identify the patterns of fistula in ano (FIA) in our local population.

*Patients and methods:* A prospective multicentric, hospital-based study (May 2018 to May 2019), included all patient presented with the clinical diagnoses of FIA. Patients with preexisting condition that might predispose to abscess formation or development of fistulae were excluded. Fistulae were classified using Park's classification depending on its location in relation to the anal sphincter muscles and the simplest system of classification of perianal fistulae that divides fistulae into either low or high depending on their relationship to the dentate line. The collected data was analyzed statistically using a computer program Statistical Package for Social Sciences (SPSS) version 19.

*Results:* One hundred and six patients were included (97 males and 9 females), with male to female ratio of 10.7:1. Their mean age was 35.63±12.33 years. Presentation was variable and the commonest was anal discharge that observed in 105 (99.1%) patients. The mean duration of symptoms was 7.60±10.23 month. Previous perianal surgery was found in 17 (16.04%) patients in form of abscess drainage. Diagnosis confirmed by perianal examination, digital rectal examination (DRE), and proctoscopy or sigmoidoscopy. Magnetic resonance image (MRI) was not performed as a tool of investigation. Using Park's classification intersphincteric FIA was seen in 75.5%. Depends on simplest system of classification it was low type in 95.3%.

*Conclusion:* Fistulae in ano classification is important because the treatment differs between different types of fistulous tracks.

**Key words** – Fistula in Ano (FIA), Presentation, Diagnosis, Classification

**Introduction**

Fistula-in-ano is one of the most common benign colorectal diseases,

and defined as an epithelized abnormal tract connecting two

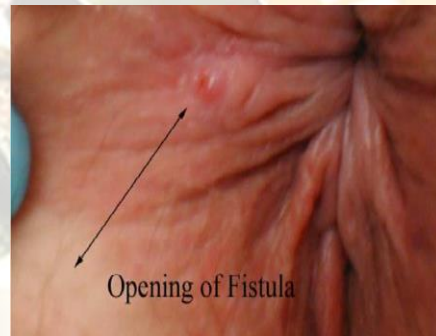
surfaces, usually the rectal mucosa and perianal skin<sup>1,2</sup>. The true prevalence of fistula-in-ano is unknown<sup>3</sup>. The incidence in men and women is 12.3 per 100,000 and 5.6 per 100,000, respectively <sup>4</sup>.

Signs and symptoms of fistula-in-ano, in order of prevalence, include the perianal discharge, pain, swelling, bleeding, diarrhea, skin excoriation and external opening <sup>5</sup> (Figure 1).

Several classification systems have been developed in an attempt to quantify disease extent and severity of fistula in ano. Parks Classification is the most common classification used for fistulas-in-ano. This classification system, defines four types of fistula-in-ano that result from cryptoglandular infections: intersphincteric, transsphincteric, suprasphincteric, and extrasphincteric <sup>6</sup>. The simplest system of classification of perianal fistulae is to divide fistulas into either low or high, depending on their relationship to the dentate line, fistulae that originate below the dentate line are considered to be low fistulae, whereas those above or at the dentate line are considered to be high <sup>7</sup>.

The diagnosis of fistula-in-ano by physical examination findings remain

the mainstay of diagnosis. The examiner should observe the entire perineum, looking for an external opening that appears as an open sinus or elevation of granulation tissue. Spontaneous discharge of pus or blood via the external opening may be apparent or expressible on digital rectal examination. Digital rectal examination (DRE) may reveal a fibrous tract or cord beneath the skin <sup>5</sup>.



**Figure 1.** External opening of fistulous tract is apparent in photo above. Proximal opening would be at level of crypts, within the anal canal. Fistulas are frequently associated with perirectal abscesses, though none are present in this case.

Goodsall described the relationship of the cutaneous opening to the expected site of the enteric opening. The rule states that cutaneous openings anterior to the transverse anal line are associated with direct radial fistulous tracks into the anal

canal, whereas openings posterior to the line have tracks that enter the canal in the midline posteriorly. The cutaneous opening is evident to the surgeon to demonstrate. The surgeon passes blunt probes along the track from the cutaneous opening and may determine the enteric opening of the fistula at proctoscopy. The challenge in the management of fistulas is to define the course of the track between these openings so that the appropriate surgical option can be used [8].

Classification of fistula in ano is used to determine (surgical) therapy, make a prognosis concerning recurrence and fecal incontinence <sup>9</sup>.

The study aimed to evaluate the patterns of fistula in ano (FIA) in our local population using Parks Classification and the simplest system of classification.

## **2. Patients and Methods**

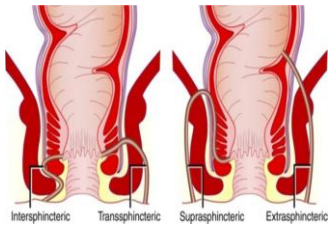
A prospective multicentric, hospital-based cross sectional study was conducted at Khartoum, Omdurman and Khartoum North Teaching hospitals after approval by the ethical clearance committee of Sudan Medical Specialization Board (SMSB), as well, an informed written consent was sought from patients prior to conduct

the study. Included were all patients presented with the clinical diagnoses of FIA during one year period from November 2013 to November 2014.

Patients with preexisting condition that might predispose to abscess formation or development of fistulae such as patients with inflammatory bowel disease, exposure to radiation therapy, malignancy or trauma all were excluded from the study. Using a pretested questionnaire data was collected. All patients were subjected to digital rectal examination (DRE) upon presentation. Proctoscopic/sigmoidoscopic examination was performed depend on the extent. Fistulae were classified using Park's classification depending on its location in relation to the anal sphincter muscles (Figure 2) [9] and the simplest system of classification of perianal fistulae that divides fistulae into either low or high depending on their relationship to the dentate line.

The collected data was analyzed using a computer program Statistical Package for Social Sciences (SPSS) version 19. Numerical data was expressed as Mean  $\pm$  Standard Deviation (SD). Categorical data was expressed as percentage and

compared using chi-square test. The P-value <0.05 was considered statistically significant.



**Figure 2.** Illustrations in coronal plane show classification of fistula in ano according to Parks et al.[6]: Intersphincteric, Transsphincteric, Suprasphincteric, and Extrasphincteric. Published in: "Imaging" of Fistula in Ano.

**3. Results**

One hundred and six patients were included (97 male and 9 female), with male to female ratio of 10.7:1. Their mean age was 35.63 ± 12.33 (Range, 5 to 75 years). Presentation was variable as they presented with anal discharge, perianal pain, and itching that observed in 105 (99.1%), 61 (57.5%), and 46 (43.4%) respectively (Table 1). The mean duration of symptoms was 7.60 ± 10.23 (Range, 1 to 36 months).

**Table 1.** Presenting symptoms in patient with FIA in the study population (n=106).

Symptom	Frequency	Percent
Anal discharge	105	99.1

Anal pain	61	57.5
Itching	46	43.4
Bleeding	04	03.8
Constipation	15	14.2

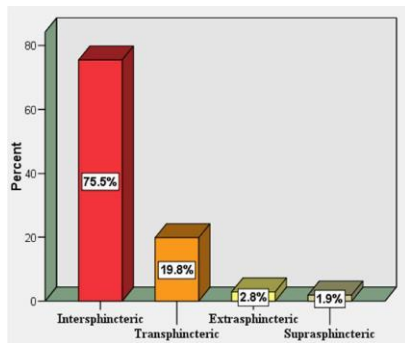
Previous perianal surgery was found in 17 (16.04%) patients (Table 2). DRE was performed in all patients, and the fistula's tract between the internal and external openings was identified in 85(80.2%). Proctoscopy and sigmoidoscopy were carried out in 98(92.5%) and 8(7.5%) patients respectively. Of note MRI was not performed as a tool of investigation. Fistula in ano was posterior in 91(85.8%).

**Table 2.** Previous perianal surgery in the study population (n=106).

Previous surgery	Frequency	Percent
Abscess drainage	9	8.5
Fistulectomy/Fistulotomy	7	6.6
Hirschsprung's Disease	1	0.09
Total	17	16.04

According to Park's classification FIA was intersphincteric, and transsphincteric in 80 (75.5%), and 21 (19.8%), respectively (Figure 3). While using simplest system of classification,

perianal fistulae were low type in 101 (95.3%) patients.



**Figure 3.** Park's classification of Fistula in Ano in study group (n=106).

#### 4. Discussion

Anal fistula represents an important aspect of colorectal practice, being a distressing condition for the patient and sometimes a challenge for the surgeon<sup>10,11</sup>. Successful surgical management of anal fistulas requires accurate preoperative assessment of the course of the primary fistulous track and the site of any secondary extension or abscesses<sup>12</sup>. Most of the patients in the current study were males that was similar to that reported in literature<sup>12,13</sup> but is in disagreement with others who did not revealed any significant differences in the circulating sex hormone levels between patients with FIA compared with matched controls<sup>14</sup>.

The main presenting symptom in our study in order of prevalence included perianal discharge, perianal pain,

itching, constipation, and bleeding. It was almost similar to the study by Sun et al.<sup>5</sup>. Most of our cases had no previous surgery and only 8.5% of patients had an abscess that drained previously. Literature showed that 7-40% of FIA preceded by anorectal abscess<sup>6,15</sup>.

Magnetic resonance image (MRI) was not performed as routine tool of investigation, as radiologic studies are not performed for routine fistula evaluation since the anatomy of most fistulas-in-ano can be determined in the operating room

[5]. Classification of fistula in ano is of immense importance as it gives accurate anatomical description for the fistulous tract which is helpful to a surgeon in planning the operative cure of the disease<sup>16</sup>. Using the simple classification, low type fistula accounts for the majority of cases (95.3%), similarly Chi-Ming et al.<sup>2</sup> in their series mentioned that up to 90% of cases had low type fistula.

Park's classification system is clinically useful because it helps predict what risk a fistulotomy may pose to faecal continence based on the amount of overlying sphincter that would need to be divided<sup>17</sup>. According

to the Parks classification, the rate of intersphincteric fistulae reported in the current study was 75.5%. Besides, 19.8% of fistulae are transphincteric, 2.8% are extrasphincteric and 1.9% suprasphincteric. The result was

comparable with the findings in the literature, were intersphincteric and transsphincteric account for 77-97.5%, while suprasphincteric and extrasphincteric accounted for 1.3-6.5% (Table 3) <sup>10, 18-20</sup>

**Table 3.** Park's Classification of FIA.

Type	Current study	Pierpaolo S. et al.	Malouf et al.	Vasilevsky & Gordon	Marks & Ritchie
Intersphincteric	75.5%	22.2%	31.0%	41.9%	56.0%
Transphincteric	19.8%	75.3%	53.0%	52.1%	21.0%
Suprasphincteric	1.9%	1.2%	3.0%	1.3%	3.5%
Extrasphincteric	2.8%	1.2%	2.0%	0.0%	3.0%

**Conclusion**

Despite significant advances over the last decades, fistulae in ano continue to present a significant challenge to surgical practitioners. It's classification is important because treatment differs between different types of fistulous tracks. A high proportion of fistulae seen in the present study were of low variety intersphincteric and transphincteric, was comparable with some of the previous studies. Most of FIA can be evaluated clinically, thus MRI is not routinely needed in primary assessment and should be offered for complicated cases. Presence of some of the perianal symptoms should raise the suspicion of the FIA.

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