

FISTULA-IN-ANO - A SINGLE INSTITUTE EXPERIENCEUsharani R¹, Lakkanna S², Yogesh Kumar Bung³, Chandrasekhar S. N⁴¹Assistant Professor, Department of General Surgery, ESIC - MC - PGIMSR, Rajajinagar, Bangalore.²Professor and HOD, Department of General Surgery, ESIC - MC - PGIMSR, Rajajinagar, Bangalore.³Postgraduate Student, Department of General Surgery, ESIC - MC - PGIMSR, Rajajinagar, Bangalore.⁴Postgraduate Student, Department of General Surgery, ESIC - MC - PGIMSR, Rajajinagar, Bangalore.**ABSTRACT****BACKGROUND**

Several techniques have been used for the management of fistula-in-ano. We conducted prospective study to assess type of diagnostic, presentation and treatment modalities and outcome of study over a period of 4 years.

MATERIALS AND METHODS

From 2005 to 2009, 56 patients presented with anal fistulas were treated in hospital and were included in the present study. Mean age 3 - 4 decades (16 - 66 years). Patients were treated with 4 operative surgeries Fistulotomy + Curettage - 6 patients (10.7%), Fistulectomy + PRI. Closure - 7 patients (12.5%), Fistulectomy-coring method - 43 patients (76.7%). Data on age, gender, type of fistula, operative interventions, healing rate and recurrences were analysed.

RESULTS

Clinical features were mainly pain, discharge, swelling, past history of I and D; 90% healed well single stage procedure, 8.9% had recurrence; and 0.5% had RV fistula, were reoperated and subsequently healed well. All the cases of fistula healed well. Best results are expected from fistulectomy.

CONCLUSION

Fistula-in-ano is a chronic manifestation of cryptoglandular infection. It has presentation ranging from pain associated with discharge to severe depression and crippling of lifestyle. Intersphincteric type is the most common variety of fistula-in-ano and fistulectomy with Coring yields better results in management of fistula-in-ano. MR fistulogram has proven to be best available diagnostic modality to understand the anatomy of fistulous tract, hence helping the surgeon to plan the surgical intervention.

KEYWORDS

Fistula-In-Ano, Coring Method.

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BACKGROUND

Fistula in Latin means pipe or flute. It is a chronic granulation tract connecting two epithelial lined surfaces, may be cutaneous or mucosal. It develops as a legacy of an anorectal abscess. Anal glandular infection is the leading cause for intersphincteric abscess and fistula formation.

A fistula-in-ano is a hollow tract lined with granulation tissue, connecting a primary opening inside the anal canal to a secondary opening in the perianal skin. Secondary tracts may be multiple and can extend from the same primary opening.

References to fistula-in-ano date to antiquity. Hippocrates made reference to surgical therapy for fistulous disease. In 1376, the English surgeon John Arderne (1307 - 1390) wrote Treatises of fistula-in-ano; Haemorrhoids and clysters, which described fistulotomy and seton use. Historical references indicate that Louis XIV was treated for an anal fistula in the 18th century.

In the late 19th and early 20th centuries, prominent physician/surgeons such as Goodsall and Miles, Milligan and Morgan, Thompson and Lockhart-Mummery made substantial contributions to the treatment of anal fistula. These physicians offered theories on pathogenesis and classification systems for fistula-in-ano.^[1,2]

Since this early progress, little has changed in the understanding of the disease process. In 1976, Parks refined the classification system that is still in widespread use. Over the last 30 years, many authors have presented new techniques and case series in an effort to minimise recurrence rates and incontinence complications, but despite 2500 years of experience fistula-in-ano remains a perplexing surgical disease.

Aims of the Study

- To study the clinical presentation/age distribution/signs/symptoms.
- To study the investigations and diagnosis.
- To study which type of surgery is beneficial.

Frequency

The prevalence rate of fistula-in-ano is 8.6 cases per 100,000 population.³ The prevalence in men is 12.3 cases per 100,000 population, and in women 5.6 cases per 100,000 population. The male-to-female ratio is 1.8:1. The mean age of patients is 38.3 years.

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Corresponding Author:

Dr. Usharani R,

#F-07, Sreepride Apartment,

Chikkabanaswadi Main Road,

Bangalore-560033.

E-mail: drushagiri@gmail.com



Aetiology

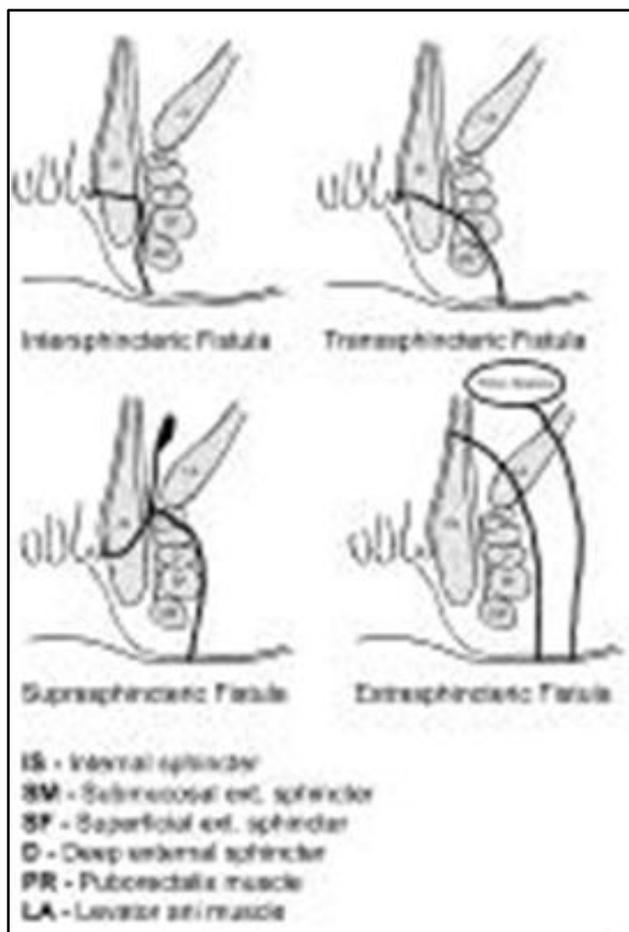
Fistula-in-ano is nearly always caused by a previous anorectal abscess. Anal canal glands situated at the dentate line afford a path for infecting organisms to reach the intramuscular spaces. The cryptoglandular hypothesis states that an infection begins in the anal gland and progresses into the muscular wall of the anal sphincters to cause an anorectal abscess. Following surgical or spontaneous drainage in the perianal skin, occasionally a granulation tissue-lined tract is left behind, causing recurrent symptoms. Multiple series have shown that the formation of a fistula tract following anorectal abscess occurs in 7% - 40% of cases.

Other fistulas develop secondary to trauma, Crohn disease, anal fissures, carcinoma, radiation therapy, actinomycosis, tuberculosis and chlamydial infections.

Classification

Parks Classification System⁴

The Parks classification system demonstrated in the image below defines 4 types of fistula-in-ano that result from cryptoglandular infections: intersphincteric, transsphincteric, suprasphincteric and extrasphincteric.^[4]



Parks Classification of Fistula-In-Ano

An Intersphincteric Fistula-In-Ano is Characterised as Follows

Common Course - Via internal sphincter to the intersphincteric space and then to the perineum.

Incidence - 70% of all anal fistulas.

Other Possible Tracts - No perineal opening; high blind tract; high tract to lower rectum or pelvis.

A Transsphincteric Fistula-In-Ano is Characterised as Follows

Common Course - Low via internal and external sphincters into the ischiorectal fossa and then to the perineum.

Incidence - 25% of all anal fistulas.

Other Possible Tracts - High tract with perineal opening; high blind tract.

A Suprasphincteric Fistula-In-Ano is Characterised as Follows

Common Course - Via intersphincteric space superiorly to above puborectalis muscle into ischiorectal fossa and then to perineum.

Incidence - 5% of all anal fistulas.

Other Possible Tracts - High blind tract (i.e. palpable through rectal wall above dentate line).

An Extrasphincteric Fistula-In-Ano is Characterised as Follows

Common Course - From perianal skin through levator ani muscles to the rectal wall completely outside sphincter mechanism.

Incidence - 1% of all anal fistulas.

Current Procedural Terminology Codes Classification

This Includes the Following

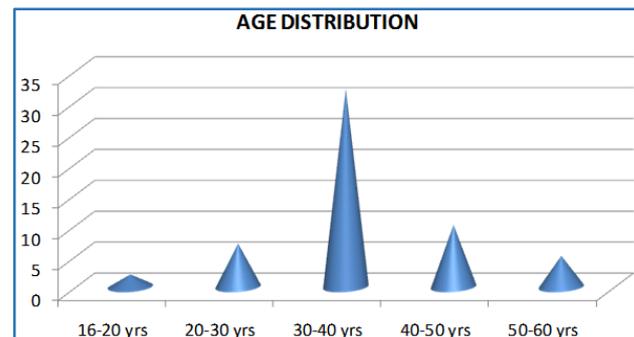
- Subcutaneous
- Submuscular (Intersphincteric, Low Transsphincteric)
- Complex, recurrent (High Transsphincteric, Suprasphincteric and Extrasphincteric, multiple tracts, recurrent)
- Second stage
- Unlike the current procedural terminology coding, the Parks classification system does not include the subcutaneous fistula. These fistulas are not of cryptoglandular origin, but are usually caused by unhealed anal fissures or anorectal procedures such as haemorrhoidectomy or sphincterotomy.

Present Study Profile

There are 56 patients' profiles studied between 2005 and 2009 (4 years), age distribution between 16 - 66 years in which males were 41 (73%) and females were 15 (27%).

Criteria for Selection

All fistulas-in-ano/recurrent fistulas, we excluded all rectovaginal fistula and fistula in children.



Clinical Presentation

Discharging of pus, blood and watery, pain, swelling, past history of I/D associated with fissure, haemorrhoids, TB and Crohn's and CA.

Clinical Symptoms

Previous I/D 10%, swelling pain 71%, discharging of pus 60%, blood 10% and watery 30%.

RESULTS

Perianal area.

External opening.

1 - 30 patients (53%).

2 to 3 - 20 patients (35%).

4 - 6 patients (10%).

Induration.

Anterior Straight.

Posterior Curved.

Investigations

- Routine.
- Specific for Fistula.
- Fistulogram - 20 patients - not very useful, only length could be determined.
- MB Injection - all patients, only in 30 patients' dye was visible in anal canal.
- Sigmoidoscopy - In 10 patients - WNL.
- TRUS - not done.
- MRI - 10 patients; defines the length, position, level, direction in 90% of the patients length of the fistula ranged from minimum 2 cm - maximum 5 cm.
- PUS/Discharge - culture and sensitivity.

Pus for Culture and Sensitivity

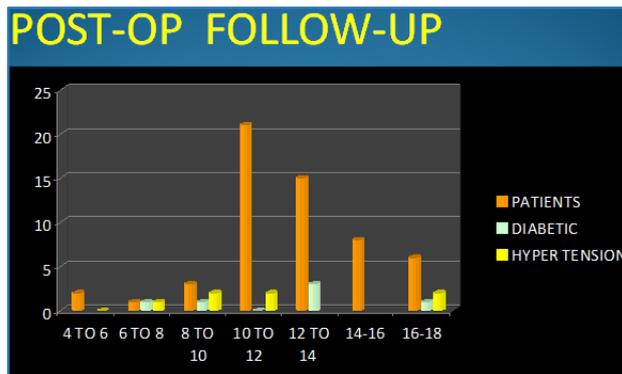
- Single organism - 20 patients (35.7%) - E. coli, Co- Ve Staphylococci, Klebsiella, Staph. aureus, Proteus, Pseudomonas.
- Multiple organism - 11 patients (19.6%) -
- E. coli + Klebsiella.
- E. coli + Staph. aureus, E. coli + Pseudomonas.
- No growth in 25 patients (44.6%).

Treatment - Single Stage Surgery¹

- Fistulotomy + Curettage - 6 patients (10.7%)
- Fistulectomy + PRI. Closure - 7 patients (12.5%)
- Fistulectomy-coring method- 43 patients (76.7%)²
- Cautery dissection was done in all patients.
- Sphincter was sutured to prevent incontinence.
- Dissection was restricted to dye stained tissue.
- Setons/fibrin glue/fibrin plug - not used.

Operative Findings

- Intersphincteric - 42 patients (75%).
- Transsphincteric - 11 patients (20%).
- Suprasphincteric - 2 patients (3%).
- Extrasphincteric - 1 patient (2%).
- In females, the fistula tract was extending up to the vaginal wall.



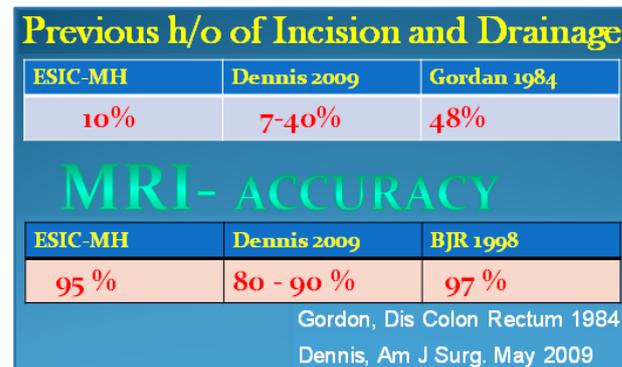
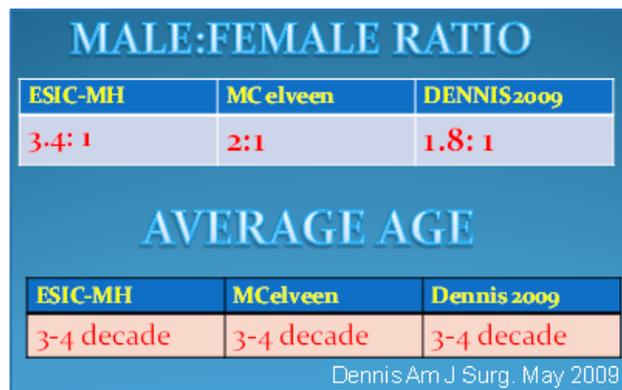
Post-Op Follow-Up

Complications

1. Incontinence - 6 patients (10.7%), was temporary and lasted for 2 months.
2. Recurrences - 5 patients (8.9%), were re-operated and subsequently healed well.
3. R. V. fistula - was seen in 1 female patient because of cautery dissection and was operated for the same 3 weeks later.

Histopathological Examinations

Non-specific inflammation was reported in all cases.



TYPE OF FISTULA					
	ESIC-MH	CORMAN 1986	MIGEL 2008	AJS	SCHAEF EN
INTER SPINCTE RIC	75%	70%	45%	30%	86%
TRANS SPINCTE RIC	20%	25%	25%	85%	28%
SUPRA SPINCTE RIC	3%	5%	7%	11%	8.6%
EXTRA SPINCTE RIC	2%	1%	15%	2.9%	33%

DISCUSSION

Fistula-in-ano is representative of the chronic process of cryptoglandular infection of anal canal gland. Most common aetiology being non-specific infection and various other less common aetiological factors have also been cited for causation of fistula-in-ano.

According to the Parks Classification, the rate of intersphincteric fistulae reported in literature is 70%; 25% of fistulae are transsphincteric, 4% are suprasphincteric and 1% extrasphincteric. In our present study 75% were intersphincteric, whereas transsphincteric, suprasphincteric and extrasphincteric contributed 20%, 3% and 2% respectively. Mean age of presentation was in 3 - 4th decade. Fistulae were more common in male in our study and same were comparable with other studies. Method of surgical interventions was chosen based upon the presentation, type, length of fistula and due considering underlying comorbidities. In our study, 6 patients (10.7%) underwent fistulotomy + curettage, whereas fistulectomy + primary closure and fistulectomy-coring method was done in 7 patients (12.5%) and 43 patients (76.7%) respectively. Complication following surgical interventions were seen in

total 12 (21.9%) patients with most common being incontinence seen in 6 patients and it was temporary lasting for 2 months, recurrence was seen in 5 patients. MRI was accurate in cases in 95% cases in demonstrating length, track and no. of openings.

CONCLUSION

- All the cases of fistula-in-ano healed well.
- Clinical features were mainly pain/discharge, swelling, past history of I and D.
- The age distribution was commonly seen B/W 30 and 40 years.
- Sex incidence – 7:2
- Investigations: MRI – was accurate in 95% of the patients.
- Methylene blue only defines whether I.O is present or not.
- Results of surgery was excellent.
- 90% healed well with single stage procedure.
- 8.9% had recurrence.
- 0.5% who had R.V fistula were re-operated and subsequently healed well.
- Best results were obtained with fistulectomy-coring method.

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