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Original research article

Agreement of coexisting abscesses and side tracks between clinical examination with anal endosonography and operative findings: Anal fistulae

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Abstract

'Fistula' is the Latin word for a reed, pipe or flute. In medicine it implies a chronic granulating track connecting two epithelium-lined surfaces. These surfaces may be cutaneous or mucosal. A fistula-in-ano is a track, lined by granulation tissue that connects deeply in the anal canal or rectum and superficially on the skin around the anus. A baseline blood and urine investigations done in all patients. Relevant investigations were done in patients who had past history of medical illnesses as diabetes mellitus, hypertension, etc. These patients were thoroughly examined. The per rectal examination findings recorded in compliant patients and in whom there was no severe perianal pain. The Anal Endosongraphy & Operative findings are 45.5% more sensitive compare to Clinical Examination in detecting Coexisting Abscesses & Side tracks. The Results of Anal Endosongraphy & Operative findings matched perfectly by Kappa Statistic.

Keywords: Anal fistulae, clinical examination, anal endosonography

Introduction

The physiology of the anal canal and pelvic floor is complex. Principal function of the anal canal is the regulation of defecation and maintenance of continence, which depend on intricate and interrelated factors [1].

The anal canal, which has a mean length of 4 cms, lengthens with squeezing of the external sphincter and shortens with straining.

Resting pressure or tone, which depends largely on the internal sphincter, averages 90 cm of H_2O and is lower in women and older patients. This high-pressure zone increases resistance to the passage of stool [2].

Squeeze pressure, generated by contraction of the external anal sphincter and puborectalis muscle, more than doubles intra-anal canal resting pressure. Squeeze pressure serves only to prevent leakage upon presentation of the rectal content to the proximal anal canal at inappropriate times [3].

The principal mechanism that provides continence is the pressure differential between the rectum (6 cm H_2O). The anorectal angle is produced by the anterior pull of the puborectalis muscle as it encircles the rectum at the anorectal ring and contributes to fecal continence. This angle may act as a flap valve or have a sphincter-like function. Maneuvers that sharpen this angle augment continence, whereas those that straighten it favour defecation [4].

'Fistula' is the Latin word for a reed, pipe or flute. In medicine it implies a chronic granulating track connecting two epithelium-lined surfaces. These surfaces may be cutaneous or mucosal. A fistula-in-ano is a track, lined by granulation tissue that connects deeply in the anal canal or rectum and superficially on the skin around the anus.

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Methodology

Twenty-two patients with complaints, clinical symptoms and signs suggestive of fistula-in-ano under all surgical units were included in the study.

Inclusion criteria

- Both sexes were included.
- Patients presenting with symptoms and signs of fistula-in-ano.

Exclusion criteria

The patients with fistula-in-ano due to Crohn's disease, tuberculosis, malignancy or any underlying chronic diseases leading to fistula formation were excluded from the study.

A baseline blood and urine investigations done in all patients. Relevant investigations were done in patients who had past history of medical illnesses as diabetes mellitus, hypertension, etc.

These patients were thoroughly examined. The per rectal examination findings recorded in compliant patients and in whom there was no severe perianal pain.

These patients were subjected for anal endosonography by a single sonographer, same sonography machine used in all patients. The sonography machine used was Phillips HDI 5000 Sono, CT and X-rays machine. The probes used were C 5-9 and L 12-5.

With endoanal ultrasonographic findings into consideration the surgical approach was planned. Patients were subjected for a thorough Examination under Anaesthesia, details were recorded which were substantiated with the findings of clinical examination and simultaneous surgical procedure undertaken.

Reliability of anal endosonography was defined after surgical treatment of all cases.

Histological examination was performed on all cases by excising a small portion of track. The histological examination of the tracks which showed diseases of exclusion criteria were not included in the study group patients.

Results

Table 1: Sex Distribution

Sex	Number	%
Male	18	81.82
Female	4	18.18
Total	22	100.0

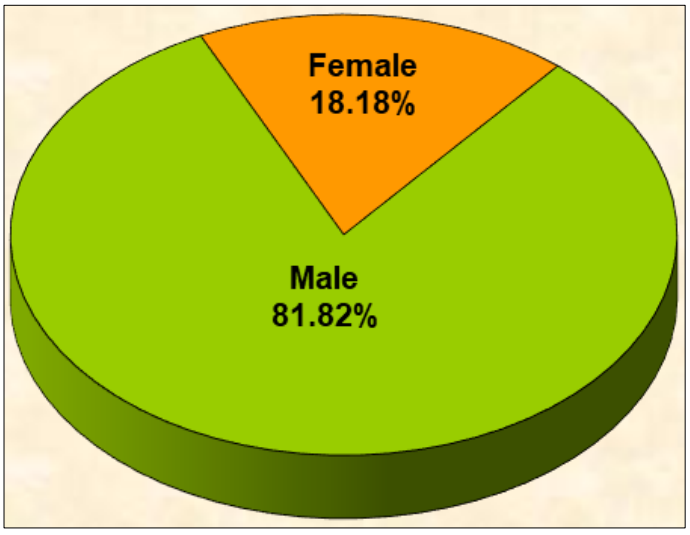

Fig 1: Sex distribution

Table 2: Agreement of Coexisting Abscesses & Side tracks between Clinical Examination with Anal endosonography & Operative Findings

Coexisting Abscesses & Side tracks					
Clinical Examination	**Anal Endosonography**		**Operative Findings**		**Total**
	Present	**Absent**	**Present**	**Absent**	
Present	-	-	-	-	-
Absent	10 (45.5%)	12 (54.5%)	10 (45.5%)	12 (54.5%)	22 (100.0%)
Total	10 (45.5%)	12 (54.5%)	10 (45.5%)	12 (54.5%)	22 (100.0%)
Inference	The Anal Endosongraphy & Operative findings are 45.5% more sensitive compare to Clinical Examination in detecting Coexisting Abscesses & Side tracks				

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Table 3: Agreement of Coexisting Abscesses & Side tracks between Anal Endosonography & Operative findings

Coexisting Abscesses & Side tracks			
Anal Endosonography	**Operative Findings**		**Total**
	Present	**Absent**	
Present	10 (45.5%)	-	10 (45.5%)
Absent	-	12 (54.5%)	12 (54.5%)
Total	10 (45.5%)	12(54.5%)	
Agreement by Kappa Statistic	K=1.00 (Perfect Agreement)		
Significance of Change	-		
Inference	The Results of Anal Endosongraphy & Operative findings matched perfectly by Kappa Statistic		

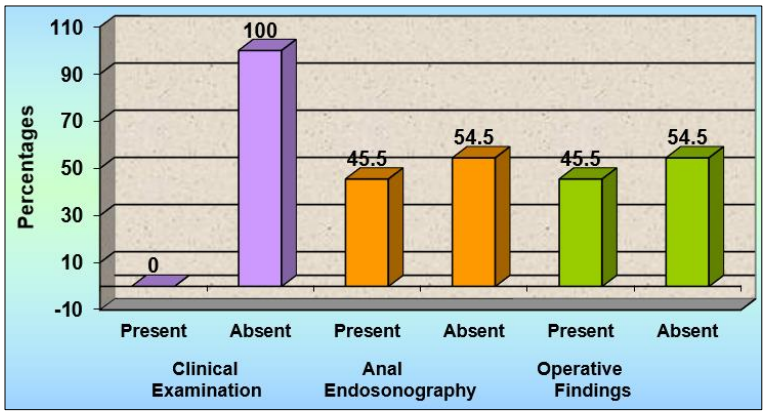

Fig 2: Co-existing Abscesses & Side Tracks

Discussion

The results of this study have been concluded keeping in view the previous studies conducted in similar pattern. Defining the anatomic relationship between the fistulous lesion and the anal sphincters and/ or adjacent organs, locating the internal opening, identifying the isolated abscesses separate from the existing fistula and information of fistulous side tracks or coexisting abscesses is essential for correct management [5].

Clinical examination of the anal fistulae with Goodsall's rule into consideration confirmed the external opening and was able to conclude a rough idea about the course of fistula track. Information regarding the location of internal opening and remote abscesses was very minimal where as the identification of side tracks and coexisting abscesses with the tracks were clinically very difficult [6].

Anal endosonography provided a high-resolution image of the anal canal anatomy and defined the anatomy of tracks and abscesses in relation to the sphincters, determined if there has been trans-sphincteric extension of the sepsis. It also provided adequate information regarding internal opening location, remote abscesses and fistula sidetracks or coexisting abscesses. This information influenced the plan of surgical treatment for the respective anal fistulae [7, 8].

We have observed a good correlation between the pre-operative anal endosonography findings and those at surgery in our study.

Conclusion

Anal endosonography is an accurate and minimally invasive method of delineating the anatomy of anal fistulae, relation of fistula tracks to the anal sphincters and, identifying deep areas of sepsis isolated from or in relation to such fistulae.

References

1. Cosman, BC. All's well that ends well: Shakespeare's treatment of anal fistula. Dis Colon Rectum. 1998;41:914.
2. Bailey & Love's. Short Practice of Surgery. 24th ed. London: Arnold; c2004.
3. Marvin L. Corman. Colon and Rectal Surgery. 5th ed. Philadelphia (USA): Lippincott Williams & Wilkins; c2005.
4. Adams F. The genuine works of Hippocrates translated from the Greek with a preliminary discourse and annotation. New York, William Wood Company; c1849.
5. Corman M. Hippocrates: On fistulae. Dis Colon Rectum. 1980;23:56-59.
6. Corman M. Treatises of Fistula in Ano, Haemorrhoids and Clysters. Dis Colon Rectum. 1983;26:197-210.
7. Bowen WH. Charles Dickens and his family. W. Heffer and sons: Cambridge; c1956. p. 138.
8. Lockhart-Mummery JP. Discussion on fistula-in-ano. Proc. R Soc. Med. 1929;22:1331-1358.