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Agreement of Remote Areas of Abscess and Internal Opening Between Clinical Examination with Anal Endosonography and Operative Findings: Anal Fistulae

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ABSTRACT
Most patients with an overt fistula have an antecedent history of abscess that drained spontaneously or for which surgical drainage had been performed. Some patients will report a continuous purulent discharge, either from the anus or the external opening, necessitating the wearing of pads. Twenty-two patients with complaints, clinical symptoms and signs suggestive of fistula-in-ano under all surgical units were included in the study. The findings of Clinical examination and Anal Endosonography with respect to Remote Areas of abscesses are moderately comparable as per the Kappa statistic and 18.2% is an additional finding of Anal Endosonography is statistically remarkable with p=0.134. The results of Clinical examination and Operative findings with respect to Remote Areas of abscesses are moderately comparable as per the Kappa statistic and 18.2% is an additional results of Operative findings is statistically remarkable with p=0.134.

INTRODUCTION

At the time of presentation two thirds of patients are in the third or fourth decade of life. Perianal fistulas are rare in patients younger than 20 or older than 60 years. There seems to be a seasonal occurrence for the condition, with the highest incidence in the spring and summer[1]. Men are 2-5 times more likely to develop a perianal fistula than women. This phenomenon is probably due to the fact that men possess more anal glands than women. The most frequent presenting complaints of patients with an anal fistula are swelling, pain and discharge[2]. The former two symptoms usually are associated with an abscess when the external or secondary opening has closed or has failed to develop. Under these circumstances, symptoms may also include pyrexia. These complaints will usually subside after the external opening reopens. Discharge may be from the external opening or may be reported by the patient as mucus or pus mixed with the stool[3]. Most patients with an overt fistula have an antecedent history of abscess that drained spontaneously or for which surgical drainage had been performed. Some patients will report a continuous purulent discharge, either from the anus or the external opening, necessitating the wearing of pads. Pruritis and anal bleeding are frequently reported but are highly nonspecific symptoms.

Anal fistula may be confused with suppurative hidradenitis and pilonidal sinus may be secondary to and/ or rectal carcinoma or may be associated with specific and nonspecific inflammatory bowel disease[4].

MATERIALS AND METHODS

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 AND DISCUSSIONS

Table 1: Agreement of Remote Areas of Abscesses Between Clinical Examination and Anal Endosonography

Remote Areas of abscesses			
Clinical Examination	**Anal Endosonography**		
	Present	**Absent**	**Total**
Present	2 (9.1)	-	2 (9.1)
Absent	4 (18.2)	16 (72.8)	20 (90.9)
Total	6 (27.3)	16 (72.8)	22 (100.0)
Agreement by Kappa Statistic	K=0.44 (Moderate Agreement)		
Significance of Change	χ^2MN=2.25, P=0.134		
Inference	The findings of Clinical examination and Anal Endosonography with respect to Remote Areas of abscesses are moderately comparable as per the Kappa statistic and 18.2% is an additional finding of Anal Endosonography is statistically remarkable with p=0.134		

Table 2: Agreement of Remote Areas of Abscesses Between Clinical Examination and Operative Findings

Remote Areas of abscesses			
Clinical Examination	**Operative Findings**		
	Present	**Absent**	**Total**
Present	2 (9.1)	-	2 (9.1)
Absent	4 (18.2)	16(72.8)	20 (90.9)
Total	6 (27.3)	16 (72.8)	22 (100.0)
Agreement by Kappa Statistic	K=0.44 (Moderate Agreement)		
Significance of Change	χ^2MN=2.25, P=0.134		
Inference	The results of Clinical examination and Operative findings with respect to Remote Areas of abscesses are moderately comparable as per the Kappa statistic and 18.2% is an additional results of Operative findings is statistically remarkable with p=0.134		

Table 3: Agreement of Remote Areas of Abscesses Between Anal Endosonography and Operative Findings

Remote Areas of abscesses			
Anal Endosonography	**Operative Findings**		
	Present	**Absent**	**Total**
Present	6 (27.3%)	-	6 (27.3)
Absent	-	16 (72.7)	16 (72.7)
Total	6 (27.3)	16 (72.7)	22 (100.0)
Agreement by Kappa Statistic	K=1.00 (Perfect Agreement)		
Significance of Change	-		
Inference	The Results of Anal Endosongraphy and Operative findings matched perfectly by Kappa Statistic		

Table 4: Agreement of Internal Opening of Anal Fistula Between Clinical Examination and Anal Endosonography

Internal Opening of Anal Fistula			
Clinical Examination	**Anal Endosonography**		
	Present	**Absent**	**Total**
Present	9 (47.4%)	1 (5.3%)	10 (52.6%)
Absent	7 (36.8%)	2 (10.5%)	9 (47.4%)
Total	16 (84.2%)	3 (15.8%)	19 (100.0%)
Agreement by Kappa Statistic	K=0.13 (Slight Agreement)		
Significance of Change	χ^2MN=3.13, P=0.077		
Inference	The results of Clinical examination and Anal Endosonography with respect to Internal Opening of Anal Fistula are comparable slightly as per the Kappa statistic and an additional results 36.8% from Anal Endosonography is statistically remarkable with p=0.077		

Table 5: Agreement of Internal Opening of Anal Fistula between Clinical Examination and Operative Findings

Internal Opening of Anal Fistula			
Clinical Examination	**Operative Findings**		
	Present	**Absent**	**Total**
Present	10 (52.6%)	-	10 (52.6%)
Absent	9 (47.4%)	-	9 (47.4%)
Total	19 (100.0%)	-	19 (100.0%)
Inference	Around 47.4% is the additional operative finding over the clinical examination		

Table 6: Agreement of Internal Opening of Anal Fistula between Anal Endosonography and Operative Findings

Internal Opening of Anal Fistula			
Anal Endosonography	**Operative Findings**		
	Present	**Absent**	**Total**
Present	16 (84.2%)	-	16 (84.2%)
Absent	3 (15.8%)	-	3 (15.8%)
Total	19 (100.0%)	-	19 (100.0%)
Inference	Around 15.8% is the additional operative finding over the Anal endosonography		

Until the early nineties, the preoperative classification of perianal fistulas, including the localization of their internal opening, was mainly based on inspection, digital examination, probing and fistulography. Fistulography used to be the only imaging modality, and is still often utilized.

It is the radiologic delineation of a fistula tract with a water-soluble contrast agent, is thought generally to be of limited value, having essentially been completely replaced by endoluminal ultrasonography and magnetic resonance imaging (MRI).

However, the technique is quite simple to perform. The patient is placed on the x-ray table, usually left lateral position and a small-bore catheter is inserted into external opening. A few milliliters of water-soluble contrast material is gently injected into the track and anteroposterior, lateral and oblique x-ray images outline the track. The accuracy rate is 16-48 per cent with a false-positive rate of 10 per cent. The interpretation of findings on fistulography may be difficult as the anal sphincter cannot be identified, and a low internal opening may be erroneously judged to be high. Fistulography is not performed for routine fistula evaluation but is helpful when primary opening is difficult to identify or in case of recurrent or multiple fistulae[5].

Since the introduction of anal endosonography in the early nineties, this imaging modality is used in the preoperative work-up of patients with a perianal fistula with increasing frequency. Despite its frequent use, there is still substantial controversy concerning the efficacy value of this investigation[6].

Most fistulae do not require ultrasonographic evaluation. However, the recurrent or complex fistula may be considered for this assessment as preoperative definition of fistulous tract and the internal opening play an important role in reducing iatrogenic damage to sphincter or recurrence of fistula.

Ultrasonographic evaluation is facilitated by use of a 3600-rotating probe using either a 7 or 10 MHz transducer covered by water filled balloon. The anal wall is clearly visible as a 5 layered structure (Fig. 8), layer 1=interface, layer 2=mucosa, layer 3=submucosa, layer 4=muscularis propria, layer 5=serosa[26]. Specific features sought are presence of an internal opening, muscle defect, or abscess, as well as the course of the tract (Fig. 9 and 10). By using ultrasound, fistula tracts will appear as a hypoechoic defect, often first seen in the intersphincteric plane, which may suggest the site of the internal opening, although the internal opening itself is not often distinctly identified. The scan can determine any trans-sphincteric extension towards ischiorectal fossa, supralevetor area, or inter-sphincteric plane[7].

According to the investigators, the additional value of conventional anal endosonography is not as high as expected. When utilizing conventional anal endosonography, it is virtually impossible to differentiate between a fistulous tract and scar tissue. This can be a major problem in patients who have undergone prior attempts at surgical repair. Particular problem areas however include specific internal opening sites and differentiation among abscess cavities, granulating tracts and scars[8].

CONCLUSION

Preoperative planning with accurate delineation of fistula tracks, extensions and sphincter involvement might help prevent recurrence and impaired continence from sphincter damage after surgery. Anal endosonography assists decision making for surgery.

REFERENCES

1. Das, S., 2001. A Concise Textbook of Surgery. 3rd Edn., Calcutta, India, ISBN-13: 9788190568128, Pages: 1346.
2. Weisman, R.I., C.P. Orsay, R.K. Pearl and H. Abcarian, 1991. The role of fistulography in fistula-in-ano. Dis. Colon amp Rectum, 34: 181-184

3. David, M.S. and W.W. Douglas, 2004. North America. Saunders, Philadelphia, ISBN-13: 9780531218303, Pages: 48.
4. George, D.Z. and J.Y. Charles, 2002. Shackelford's Surgery of the Alimentary Tract. 5th Edn., Saunders, Philadelphia, ISBN-13: 9780323402323, Pages: 2624.
5. Ahmad, A.H. and R.B. Shrivastava, 2003. ASI Textbook of Surgery. McGraw-Hill, India, ISBN-16: ?9780074621493,
6. Faujdar, H.S., G.G. Mehta, R.K. Agarwal and N.K. Malpani, 1981. Management of fistula in ano. J Postgrad Med., 27: 172-177.
7. Roshan, L.G., 1996. Recent Advances in Surgery. Jaypee Brothers Medical Publishers, India, ISBN-13: 9781787791626, Pages: 246.
8. Ian, P.T., 1977. Rob and Smith Operative Surgery of Colon, Rectum and Anus 3rd ed. 3rd Edn., Butterworths, London-Boston, ISBN-13: 9780750612555, Pages: 360.