



Clinical And Radiological Study Of Fistula In Ano In Tertiary Care Center

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Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Aims & Objectives Of The Study:

To study the different modes of clinical presentations of the fistulae-in-ano ,To evaluate the role of MR imaging and its use as a pre – operative evaluation modality for perianal fistulae. This has been done by analysing its ability to delineate :- a. The primary tract b. Secondary tracts and its ramifications. c. Abscess / Source of persistent infection. d. Relation of the tract to the sphincter complex. e. Relation of the tract to levator ani.

Methods:

A prospective study of 30 patients with suspected fistula in Ano, primary or recurrent, presenting to the Osmania General Hospital,Hyderabad between August 2015 to August 2017 admitted in the Dept. Of General Surgery. All the 30 patients will be examined clinically and later subjected to MR Fistulography

Results:

MR fistulography was performed in 30 patients for pre operative evaluation of fistula in ano . Male to female ratio was 9:1. A majority (60%) of the 30 patients were patients with recurrent fistula in ano. Tuberculosis and Diabetes mellitus were the two major ano risk factors and were found to be important contributory factors for recurrence of the lesion . 83% of the patients had a complicated fistula (i.e. \geq grade).

Conclusion:

MRFG is a rapid, well tolerated accurate technique with excellent surgical correlation but less concordance with clinical assessment and is therefore an ideal pre-operative imaging modality for Fistula in Ano

Keywords: Fistula in ano, MRFG

Introduction

More is missed by not looking, then by not knowing ”by Thomas M’ Crae. Fistula-in-ano form a good majority of treatable benign lesions of the rectum and anal canal. 90% or so of these cases are end results of crypto glandular infections. As such, the vast majority of these infections are acute and significant minority is contributed by chronic, low-grade infections, hence pointing to varying etiologies. The common pathogenesis however is the bursting open of an acute or inadequately treated ano-rectal abscess into the peri-anal skin. Most of these fistulas are easy to diagnose with a good source of light, a

proctoscope, and a meticulous digital rectal examination. Despite the easy to diagnosis, establishing a cure is problematic on two accounts. Firstly, many patients tend to let their ailment nag them rather than being subject to examination, mostly owing to the site of affection of the disease. The more important second factor is that a significant percent of these diseases persist or recur when the right modality of surgery is not adopted or when the post-operative care is inadequate. So these conditions affect the young and middle aged persons causing loss of valuable productive hours. The importance of imaging and treatment of a fistula in Ano, is

attributed to the complex pelvic floor anatomy and the fistula's notorious reputation of recurrence despite utmost care taken during and after its surgery.

The continuing need for a better imaging modality for fistula in ano led to the use of MRI as a diagnostic and pre – operative evaluation modality. Magnetic resonance imaging is a recently devised modality to study fistula – in – ano. Imaging is done in axial, coronal and sagittal planes using T1, T2, STIR and TRIM sequences. Various coils, namely, spine array, body array and special endorectal coils may be used. The following study involves detailed evaluation of fistula in ano, its complications and pelvic floor anatomy using MR fistulography, and comparing it with clinical and surgical results

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2. To evaluate the role of MR imaging and its use as a pre – operative evaluation modality for perianal fistulae. This has been done by analysing its ability to delineate :-
 - a. The primary tract
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Patients And Methods

A prospective study of 30 patients with suspected fistula in Ano, primary or recurrent, presenting to the Osmania General Hospital,Hyderabad between August 2015 to August 2017 admitted in the Dept. Of General Surgery. All the 30 patients will be examined clinically and later subjected to MR Fistulography. MR Fistulography will be performed using GE 1.5 Tesla using HDX using PA coils.

Method:

Results

Patient placed in lateral position and the external opening of the fistula is identified and cannulated and saline is injected. Patient is then placed in supine position in MR gantry

MR Technique Used: A scout saggital section is obtained through the anal canal region which will be used for planning of coronal, saggital and axial views.

1. STIR - CORONAL
2. T1 – CORONAL
3. T2 – SAGGITAL
4. T1 – AXIAL
5. T2 – AXIAL
6. T2 FAT SAT – AXIAL

These sections will be taken extending from perianal region to above the level of the levator ani muscle.

Inclusion Criteria

All the patients included in the study presented to the surgery department for any of the following indications

1. Age group from 30 to 80 years.
2. Preoperative evaluation for all clinically proven fistula in ano.
3. Single / Multiple discharging sinuses in the perianal region.
4. Recurrent perianal abscess

Exclusion Criteria

1. Patients with MR incompatible devices or implant
2. Patients on life support system.
3. Patients with profound septicemia with inability to lie down in supine position
4. Patient with claustrophobia

DISTRIBUTION OF CASES BY AGE AND SEX

There are 30 cases undergone for MRFG for suspicion of fistula in ano.

Table – 1 Age Distribution in Patient with Fistula in Ano

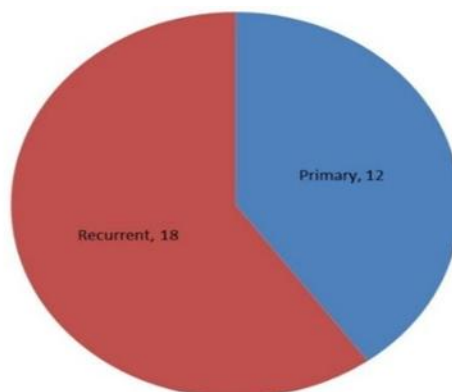
Age Group (Years)	No of Cases	Percentage
31-40	4	13
41-50	10	33
51-60	11	39
61-70	4	13
71-80	1	3
Total	30	100

There were 4 females in the age group 50 - 75 years. Out of 26 males 13 (50%) were in the age group 41-60 years. The number of male patients are significantly higher when compared to females.

Table – 2 Sex Incidence of 30 Patients with Fistula In Ano.

Sex	No. of cases	%
Male	26	86.6
Female	4	13.4

Figure 1 :Type of fistula



It was observed that at least 50% of the patients with recurrent fistulas had some associated risk factor. This shows the importance of presence of risk factors in recurrence

In our study majority of the cases (60%) reviewed by MRFG had recurrent fistulas.

Only 10% of the patients with no risk factors were found to have higher grade fistulas i.e. > grade IV. Whereas the high risk population had more cases, 30% with higher grade fistula Patients with risk factors (TB/DM/Both) were found to have more incidence of higher grade fistulas as compared to fistulas in low risk population.

Almost half (50%) of the patients evaluated by MRFG were found to have abscess collections in various sphincteric planes. It was observed that in

17% of the patients, abscess collections occurred in multiple planes, the detection of which has significant implications on the outcome of the surgery

It was observed that the majority (70%) of the patients who underwent MRFG were found to have secondary tracts which have utmost importance in surgical planning.

It was observed that the occurrence of secondary tracts was significantly higher in recurrent cases which was almost 50% . So it is important to look for secondary tracts in recurrent cases

83% of the cases found to have supralelevator collection had recurrent fistulas, and 17% had a recurrent fistula.

Table 3:Detection of internal opening by MRFG as conformed on surgery

Types	Internal Opening			
	MR		Surgical In Op	
	Absent	Present	Absent	Present
Primary	1	11	1	11
Recurrent	1	17	5	13

Among the 30 patients diagnosed to have primary tracts by MRFG the diagnosis for internal opening was found to match with the surgical report in 28 patients, which gives the 86% for detection of internal opening by MRFG

The percentage of MR grading was found to be 92% in Primary fistulas, whereas it 61 was found to be 94% in recurrent fistula.

Out of the 30 patients with primary tracts the grading was found to be surgically correct in 28 patients, which gives an agreement of grading in 93%. The 2 remaining patients were found to have fistulas of lower grades on surgery. So, it was observed there

was a tendency for over grading (7%) by MRFG (table 3) ut of the 30 patients with suspected fistulas, the pre – operative clinical grading was found to be surgically correct in 8 patients only. The complete agreement between clinical and surgical grading was found in 26% only. It was observed that there was a tendency for lower grading by the pre-operative clinical assessment

It was noted that in almost all grades of fistulae the findings of MRFG grading tallied more closely with surgical grading in relation to clinical grading with surgical grading

Table 4: MRFG grading and clinical grading as confirmed by surgery for Fistula In Ano

Grade	Clinical Grade		MR Grade		Surg. Grade	
	No. of patients	%	No. of patients	%	No. of patients	%
1	10	33.3%	5	16.7%	6	20.0%
2	10	33.3%	9	30.0%	8	26.7%
3	7	23.3%	4	13.3%	5	16.7%
4	2	6.7%	6	20.0%	5	16.7%
5	1	3.3%	6	20.0%	6	20.0%

Discussion

MR fistulography was performed on 30 patients for the confirmation and grading of Fistula in Ano.

Out of the 30 patients, 26 (86.6%) were male patients and 4 (13.4%) were female patients.

Male : Female – 9 : 1 Male preponderance may be related to an increased number of anal glands, which also tend to be more cystic and ramified when compared with women^{1,2}. These patients were in the age groups ranging from 31 to 80 years. Out of the 26 males, 13 (50%) were in the age group 41-60 years.

Broadly, the patients fell into two groups, i.e., primary and recurrent. Patients in the primary group were those who had a fistula in Ano for the first time and had never been operated for the same. Patients in the recurrent group were those whose fistulae had been operated upon at least once previously.

In our study, the majority of the patients, (60%), had recurrent fistulas. This was probably due to the high incidence of recurrence of fistulae in ano. .

Two risk groups were identified in our study of 30 patients. These were Tuberculosis and Diabetes Mellitus. In our study group, 6 patients were found to have tuberculosis and 7 patients had D.M. Two of these patients had both TB and DM. In all 50% of recurrent fistulas had some associated risk factor.

It was consecutively observed that of the 18 (60%) patients with recurrent fistula, 3(17%) had TB and 5(28%) had DM. Totally 45% of the recurrent cases were found to have some associated risk factor which signified the influence of these risk factors on the

morbidity of fistula in ano and especially the recurrence.

As regards the detection of primary tracts, we obtained a sensitivity and specificity of 100%, in comparison to a sensitivity of 100% and specificity 86% in the study of Beet – Tan et al.³

As the detection of secondary tracts has significant implications on the prognosis and outcome of surgery for fistulae in Ano, their detection by MRFG is crucial. If not identified and properly eradicated, these extensions and tracts may lead to recurrences. Results of the study by Lunniss et al^{5,6} suggested that MR imaging could depict more extensions than could surgical exploration. In the study by Beets – Tan et al,³ they concluded that pre operative MR imaging was 100% accurate in detection of secondary extensions. Secondary tracts are ramifications from the primary tract. Because the presence of horseshoe tracts greatly alters the surgical approach and its outcome, they have been separately mentioned. 70% of the patients in our study were found to have secondary tracts. Comparitively in a study of 56 patients by Beets – Tan et al,³ 39% of the cases had secondary.

In our study, 6 cases were found to have supralelevator component by MRFG. 83% (5) of these had an associated risk factor (TB/DM/Both) which was quite significant

Out of the 30 patients with suspected fistula in Ano, MRFG grading was found to be surgically correct in 28 patients, which gave a concordance of 93% similar to the study by Morris et al⁴

83% of the patients had a complicated fistula (i.e. \geq grade II).

On clinical assessment out of 30 patients, 24 Patients (80%) had external opening posterior to anal opening, 5 patients (17%) with midline external opening and One patient (3%) had anterior fistula. Internal opening is clinically revealed in only 26% of cases, which is 93% in MRFG. In study maximum number of patients are with single external opening

In a study, in almost all cases the duration of illness was < 1 year compared to Deshpande et al in which the incidence of disease was similar in both 1 year.

In almost all the grades of fistulae, the accuracy of MRFG grading was observed totally more closely with surgical grading in comparison to clinical grading.

In addition to the 6 cases with supralelevator components, 4 other cases were detected to have additional findings on MRFG, which significantly altered the surgical approach and final prognosis. Three of these patients were found to have scrotal abscesses and 1 patient who was a diabetic had an abscess in the thigh. In all these cases there was no clinical suspicion of any additional finding. Therefore, in at least 30% of the cases, additional information was provided by MRFG

MRFG grading was found to have a 93% concordance with surgical (pre-operative) grading compared to 26% concordance of pre-operative clinical assessment method to surgery

MRFG significantly altered the surgical approach due to its ability to demonstrate clinically undetected and secondary tracts.

Conclusion

Clinical examination less accurate to detect internal opening while MR fistulogram could detect most of the internal openings which were confirmed in surgical findings. High spatial resolution MR imaging with HDX PA coils is accurate for the

detection of perianal fistulas. It shows the surgical anatomy and maps out the perianal fistulas accurately and provides additional information on secondary extensions in patients with complex fistulas. The largest additional value from preoperative MRFG was obtained in patients with complex fistulas that were associated with Tuberculosis and Diabetes mellitus and in patients with recurrences. Our study showed that the surgical approach and procedure was drastically affected by MR findings of additional tracts and abscess. Long term followup is required to evaluate the impact of MRFG in patients with recurrent fistulas. But our study clearly showed that preoperative MRFG led to more aggressive surgery for the removal of complex tracts which may have a significantly long term effect. Finally we conclude that MRFG is a rapid, well tolerated accurate technique with excellent surgical correlation but less concordance with clinical assessment and is therefore an ideal pre-operative imaging modality for Fistula in Ano.

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