Original Research Paper

General Surgery

CLINICAL AND RADIOLOGICAL STUDY OF FISTULA IN ANO IN TERTIARY CARE CENTER

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ABSTRACT The aim is 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 The primary tract, Secondary tracts and its ramifications, abscess / source of persistent infection, relation of the tract to the sphincter complex and relation of the tract to levator ani.

KEYWORDS :

INTRODUCTION: 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. . 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.

Surgery can be extremely demanding, especially if the fistula is complex. The objectives are to eradicate the tract and drain associated sepsis whilst simultaneously preserving continence. Imaging needs to accurately determine the exact anatomy and roots of the fistula, which is originally the most important management objective. This will define the surgical approach and ensure that treatment is complete. 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.

MATERIALS 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:

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.
- Age group from 30 to 80 years.
- Preoperative evaluation for all clinically proven fistula in ano.

- Single / Multiple discharging sinuses in the perianal region.
- Recurrent perianal abscess for detection of undetected tracks.

Exclusion Criteria
- Patients with MR incompatible devices or implant
- Patients on life support system.
- Patients with profound septicema with inability to lie down in supine position.
- Patient with claustrophobia.

ANALYSIS OF RESULTS
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

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

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

Table – 3 Incidence of Primary and Recurrent fistulas in 30 patients

Types	No.of Cases	Table N %
Primary	12	40.0%
Recurrent	18	60.0%

Table – 4 : Recurrence Rate with High Risk Factors

Associated diseases	No.of cases	Table N %
DM	4	22%
Nil	11	61%
TB	2	11%
TB, DM	1	6%

Table – 5 : Distribution of Cases According to Various MRI Grades of Fistula in Ano

Grade	No. of cases
1	5
2	9
3	4
4	6
5	6

Table – 7 Breakup of Cases with Abscess collection in relation to the Various Sphinctericplanes (IS/ES/SL) as seen on MRFG

Collection plane	No. of cases	%
ES	3	10.0%
ES+SL	2	6.7%
IS	5	16.7%
IS+ES	1	3.3%
IS+ES+SL	1	3.3%

IS+SL	1	3.3%
Nil	15	50.0%
SL	2	6.7%

Table – 6 : Evaluation of different grades of Fistula in risk group as compared to non-risk group.

Associated diseases	No.of cases in each MR Grade				
	1	2	3	4	5
DM	1	2	1	2	1
Nil	4	6	2	2	1
TB	0	1	1	2	2
TB, DM	0	0	0	0	2

Table – 7: Distribution of Secondary Tracts

Types	Absent		Present	
Primary	5	16.7%	7	23.3%
Recurrent	4	13.3%	14	46.7%

Table – 8: Distribution of Secondary Tracts in various grades of fistula

MR Grade	Secondary Tract	
	Primary	Recurrent
1	0	0
2	3	6
3	1	0
4	2	4
5	1	4

Table – 9: Table showing detection of Internal Opening of Fistula in Ano by MRFG as Confirmed on Surgery

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

Table – 10: Table showing results of MRFG grading as confirmed on surgery in Primary and Recurrent Fistulas

	MRFG	Surgery	percentage
Primary	12	11	92%
Recurrent	18	17	94%

Table – 11: Table showing findings of 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

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. 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 its recurrence

After per rectal examination of the 30 patients they were subjected to MRFG and each patient was evaluated by scrutinizing the coronal, axial and saggital sections. According to the presence and position of the primary tracts, secondary tracts, presence and abscence collections

and their locations, each fistula was graded according to the St.James University Hospital classification.

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 of the cases, i.e 83%, had a complicated fistula. Only 30% of the patients with no associated risk factor were found to have higher grade fistulas, (i.e ≥ grade IV), whereas, 60 % of the high risk population had higher grade fistulas. 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 24 patients, which gave the sensitivity of 86% for detection of internal opening by MRFG. As regards the detection of primary tracts, we obtained a sensitivity and specificity of 100%. 70% of the patients in our study were found to have secondary tracts. It was also observed that the majority (78%) of the cases with secondary tracts were those who had recurrent fistulas.

In 7% of the cases with non-concordance, 1 case was diagnosed to be of grade II was found to be only grade I. The other case was diagnosed as grade IV which were subsequently found to be grade III on surgery. So, it was observed that there was a slight tendency for over grading by MRFG. The over diagnosis may be due to epithelialised tracts.

MRFG gradsing 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 undetectable abscesses and secondary tracts.

CONCLUSION

Clinical examination less accurate to detect intenal 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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