



## Observational Study of Usefulness of MRI Fistulography in Patients with Complex Perianal Fistulas at S.M.S. Hospital Jaipur

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### Abstract

*Perianal fistula is a chronic inflammation of Perianal tissues which is usually caused by an abscess. The need to reduce the complications such as recurrence, incontinence or both (incontinence recurrence) was felt with a suitable preoperative plan of surgery in management of complex Perianal fistulas and also to avoid unnecessary wide exploratory dissection through sphincter.*

**Aim:** *To study the usefulness of Magnetic Resonance Fistulography in patients with complex Perianal fistulas.*

**Objective:** *To relate the pre-op-magnetic resonance findings, intra operative findings and to find out the complications in complex fistula during 6 months follow up.*

**Material and Methods:** *The hospital based Descriptive Observational Department of Surgery and Radiology, S.M.S. Hospital where 60 cases were considered in final analysis between age group 18-85 years in either sex, patients with symptomatic complex Perianal fistulas attending surgical OPD patients whom MRI Fistulography cannot be performed. Detailed history with clinical examination (Digital Rectal Examination and Proctoscopy Preoperatively MRI Fistulography) was done.*

**Results:** *96.67% of each case for intra-operative and pre-operative MRI Fistulography where internal opening was accessed is considered here. Sensitivity, specificity, PPV, NPV and diagnostic accuracy of MRI in Horse Shoe Fistula were 87.50%, 94.2%, 70%, 98% and 93.33% respectively. Comparison of tract length and in positions of external openings in pre-operative MRI and intra-operative was found not significant. Complication associated with fistula 11.67% (n=7) patients were incontinence and 26.67% cases were discharge at 1st week of the operation and at 1st month incontinence was also observed in 4 cases (6.67%).*

**Conclusion:** *Pre-operative MRI Fistulography is a key to success of appropriate management in complex Perianal fistula.*

**Keywords:** *Pre operative, Magnetic Resonance Fistulography, complex Perianal fistulas intra-operative.*

### Introduction

Perianal fistula is a chronic inflammation of perianal tissues which is usually caused by an abscess. Anal fistula has its maximum incidence

between 3<sup>rd</sup> and 5<sup>th</sup> decades. Men are affected 2-4 times more commonly<sup>1</sup>. The anal canal extends from the anus to the rectal ampulla and is 2-5 centimetres long; shorter in women than in men.

There are anal glands that vacant into anal sinuses around the dentate line. The glands are primarily within the intersphincteric space or the internal sphincter. Anal glands are slightly more numerous in men than in women<sup>2</sup>. There is a group of fistulas as well with complex, branched and high course, especially in patients after previous surgeries or patients with Leśniowski-Crohn disease. Difficulties in the assessment of such tracts may lead to unsuccessful “blind” attempts at tract delineation during surgery. These attempts may be followed by formation of a false canal and orifice and in consequence, by unnecessarily extensive surgery. Furthermore, “blind” operation favours the formation of pathological granulation tissue – inflammatory foci, while a too aggressive or too conservative operation causes disease recurrence or development of complications such as anal sphincter injury and a faecal incontinence. At present, recurrent many anal fistulas which are complex and rare having no parameters for its classification, but following three categories can be taken into consideration in describing complexity in a fistula:

- Presents a high risk of fecal incontinence surgical treatment.
- The difficulty of the anatomical pathway and number of fistulous tracts.
- Lack of healing or recurrence, i.e. reappearance more than once<sup>3</sup>.

The patient management with perianal fistula included clinical examination of their region and per rectal examination to further know the approx. course of the tract as well presence or absence of internal opening and its location just prior to the introduction of radiological imaging. Further, adages like the Goodsall’s rule<sup>4</sup> were taken into account. It was not possible to differentiate between a fistula and a sinus in which to know about the exact place of internal opening of fistula, associated collections, any branching of the fistulous tract and associated inflammatory disease of the rectum, in case if present. However, even with meticulous clinical examination and seemingly adequate

surgery, there was significantly high rate of recurrence. The need to reduce the complications such as recurrence, incontinence or both (incontinence recurrence) was felt with a suitable preoperative plan of surgery in management of complex perianal fistulas and also to avoid unnecessary wide exploratory dissection through sphincter.

The following are the key objectives of the study:

- To study the usefulness of Magnetic Resonance Fistulography in patients with complex perianal fistulas with the objectives to relate the pre-op magnetic resonance findings and intra operative findings
- To find out complications in complex fistula during 6 months follow up.

**Purpose:** To reduce the complications such as recurrence, incontinence or both (incontinence recurrence) to decide pre-operative plan of surgery in management of complex perianal fistulas and avoid unnecessary wide exploratory dissection through sphincter.

### Material and Methods

The hospital based Descriptive Observational Department of Surgery and Radiology, SMS Hospital where study duration is considered as March 2017 to November 2018 along with sample size calculated at 95% confidence level and 0.05 alpha error assuming sensitivity of magnetic resonance imaging to detect fistula 92.85% as per seed article. Also usefulness assessment of preoperative magnetic resonance imaging Fistulography in patients with perianal fistulas is considered. At 7% absolute allowable error and prevalence of disease 0.928, sample size is found 52 patients of high fistulas which are further rounded off to 60 such patients to counter the effect of loss during follow up. Symptomatic complex perianal fistulas attending surgical OPD

To determine the sample size the following formula was used:

- $n = Z^2pq/d^2$

- p=Proportion of population sensitivity of magnetic resonance imaging to detect fistula 92.85%, Q =1-p, D=Degree of accuracy level considered at 7%

So, after rounded off 60 cases were considered in final analysis those patients who have given written and informed consent, Age group 18-85 years in either sex, Patients with symptomatic complex perianal fistulas attending surgical OPD. Patients whom MRI Fistulography cannot be performed (dental implanted electric and electronic devise, heart pacemaker, metallic devices, ocular prosthesis, implantable drug infusion pumps, claustrophobia). Patient not fit for surgery. Patient with superficial fistula Patient with malignancy (colon, prostate, cervix, and vagina) and post radiation were excluded.

### Methodology

All patients reported to hospital with perianal symptomatic fistula to be included in the study. After explaining about the study to the subjects, an informed consent was obtained followed by a detailed history with clinical examination (Digital Rectal Examination and Proctoscopy for anal tone, openings and other findings previous scar etc.) with more emphasis on the parameters given below in outcome variable. Pre-operatively MRI Fistulography was done in all eligible cases. The patients were operated under regional or general anesthesia. Under anesthesia, an anorectal examination was performed to verify the findings of the clinical examination. A dye study of the fistula tract was performed by placing moist gauze in the anal canal and injecting about 2 mL of methylene blue through the external opening. Staining of the gauze piece was denoted patency of the fistula tract. Here a probe was slowly passed into the fistulous tract via external opening. In the fistulotomy, the fistula tract was lay opened over the probe placed in the tract. After the fistula tract had been laid open, the tract was curetted and examined for secondary extensions. In the fistulectomy, a keyhole skin incision was made over the fistulous tract and encircles the external opening. The incision was

deepened through the subcutaneous tissue, and the tract was removed from surrounding tissues. Towards the anal verge, fibers of the anal sphincters overlying the tract was divided, patient was followed up for 6 months.

Intra-operative findings were noted as fistula's Tract, Horse shoe Fistula (Side Tract, length of tract, abscess, opening external & internal). Follow up was done to find out any complications at One week, one month, six months.

Statistical analysis was performed with the SPSS, Trial version 23 for Windows statistical software package (SPSS inc., Chicago, il, USA) and Primer for the generation of descriptive and inferential statistics. The Categorical data were presented as numbers (percent) the quantitative data were presented as mean and standard deviation. The difference in proportion was analysed by using chi square test Statistical significance was set to  $p < 0.05$ .

### Results

The following are the key results observed during the study:

- Among 60 study patients, 11.67% (n=7) of the patients were below the age of  $\leq 25$  years, 28.33% (n = 17) in the age group of 26 to 35 years, 26.67% (n = 16) in the age group of 36 to 45 years, 21.67% (n = 13) in the age group of 46 to 55 years, and 11.67% (n=7) of the patients were above the age of 55 years. The mean SD age of patients was  $40.78 \pm 12.54$  years. Maximum numbers of patients were in the age group of 26 to 45 years. Among 60 study patients, 11.667% (n = 7) of the patients were females and males were 88.333% (n= 53). Male preponderance was observed in the study population. The male: female ratio was 7.54:1. out of 60 patients, all patients had complain of perianal discharge (100%), 81.67% (n=49) were suffering from pain. 5% (n=3) were suffering from fecal incontinence and 81.67 % (n=49) were bearing both pain as well as discharge.
- According to personal history of the patients, 81.67% (n=49) patients used to smoke, 96.67%

(n=58) patients had constipation problem. Out of 60 patients, 88.33% (n=53) patients have mixed diet and 11.67% (n=7) are vegetarian. According to past medical history, 1.667% (n=1) had DM, 18.33% (n=11) had HTN and TB had 1.667% (n=1). Out of 60 patient, 11.67% (n=7) were No history of perianal abscess and 88.33% (n=53) were present, in which 13.3% (n=8) were I & D (perianal abscess), 66.7% (n=40) of fistula surgery', 8.3% (n=5) of piles surgery.

- The intersphinctric (type 1) was most common followed by transphinctric in MRI and intra-operative. Out of 60 cases, twelve cases had two tracts were found intra operatively and 11 cases had two tracts were found (12/60 =20%) in MRI. No significant difference was observed among both as per type of fistula.
- Out of total 60 no. of cases, 51.67% of belong to intersphinctric MRI Fistulography and intra-operatively both & 20% belongs to transsphinctric category in both. Only 4 cases were having different type.
- Out of 4 cases intra-operatively, that were extra sphinctric among which, one case was suprasphinctric in MRI. Out of 6 cases Intro-operatively, that were intersphinctric and transphinctric one case was found as both tract suprasphinctric
- Out of 3 cases intra-operatively, that was of Trans and extrasphinctric, among which one case was found as transsphinctric in MRI. Out of 12 casestranssphinctric in introoperatively, all were intersphinctric and transphinctric in MRI.
- 30 patients (50%) had evidence of abscess formation in intra-operative while in MRI 43.33% cases have abscess. No significant difference was observed according to Perianal Abscess in intra-operative and MRI findings.
- In Preoperative MRI and Intra-operative findings (P=0.498NS) Ischioanal cases were 38.33% in MRI as compared to intro abscess observed in 45% cases. Rest was ischiorectal.
- In our study, intro-operatively abscess was present in 30 cases while absent in rest 50% cases out of 60 cases. Out of 60 patients, Abscess was present in 30cases intra-operative; out of them 26 patients were show abscess on both MRI and surgery (True Positive). Out of remaining 30 patients all were no abscess on both MRI and surgery (True Negative).
- No patients were diagnosed as abscess fistulae on surgery were showing any abscess on MRI (False Positive). 4 patients which were not diagnosed as abscess fistulae on MRI were show abscess on surgery (False Negative). In our study, sensitivity, specificity, PPV, NPV and diagnostic accuracy of MRI in (abscess were (26/30) 86.67%, (30/30) 100%, (26/26) 100%, (30/34) 93.33% and (56/60) 93.33%.
- According to MRI counts, 28% cases occurs for 4 o'clock followed by 27% for 5 o'clock, 22% for 8 o'clock position and so on. Similarly intra-operative cases according to external openings position were as 32% for 5 o'clock, 25% for 4o'clock& 8 o'clock each and so on. No significant difference was observed in the cases present in positions of external openings between Pre operative MRI Fistulography and Intra-operative. (P=0.99NS)
- The comparison of cases as per internal opening across intra-operative and Pre operative MRI Fistulography. There were 3.33% of cases each found in intra-operative and Pre operative MRI Fistulography respectively where the internal opening was not accessed and 96.67% of cases each for Intra-operative and Pre operative MRI Fistulography respectively where internal opening was accessed. This finding was statistically not significant
- The comparison of tract length in preoperative MRI and intra-operative wise in which for MRI, the track length mean was  $6.2 \pm 1.6$  followed by  $6.3 \pm 1.7$  for intra-operative category. The p value LS was calculated for both as 0.78 NS.
- No significant difference was observed among the Preoperative MRI and Intra-operative. (P=0.798NS) as in MRI (10 cases) 16.67% cases and in intra-operative (8) 13.33% were

Horse Shoe Fistula present. In our study, sensitivity, specificity, PPV, NPV and diagnostic accuracy of MRI in Horse Shoe Fistula were 87.50%, 94.2%, 70%, 98% and 93.33%.

- According to various surgeries for complex fistula in Ano. Stoma Formation was performed

in 2 cases due to multiple opening and fecal incontinence. Fistulectomy with seton tie was mostly performed 53.33% cases followed by Fistulotomy 25% Fistulectomy 18.33%, fistulotomy with diversion stoma 3.33%.

**Table No 1:** Demographic characteristics of the study population

	Variable	Number	Percentage (%)
	<b>No of patients</b>	<b>60</b>	<b>100</b>
<b>Age Group</b>	≤ 25	7	11.67
	26 to 35	17	28.33
	36 to 45	16	26.67
	46 to 55	13	21.67
	> 55	7	11.67
	<b>Mean ± SD</b>	40.78 ± 12.54 years	
<b>Gender</b>	Female	7	11.67
	Male	53	88.33
<b>Chief Complaint</b>	Discharge	60	100.00%
	Pain	49	81.67%
	Both	49	81.67%
	Fecal incontinence	3	5.00%
<b>Personal history</b>	Smoking	49	81.67
	Constipation	58	96.67
<b>Diet</b>	Mixed	53	88.33
	Veg.	7	11.67
<b>Past Medical History</b>	DM	1	1.67
	HTN	11	18.33
	TB	1	1.67
<b>Perianal Surgery (N=53=88.30%)</b>	I &D for perianal abscess	8	13.30%
	Surgery for fistula	40	66.70%
	Surgery for piles	5	8.30%

**Table No. 2:** Comparison of types of primary tract in pre operative MRI finding and intra-operative

Type of Tracts	Name of Tracts	Pre-operative MRI (N=60)		Intra-operative (N=60)		P Value LS
		No	%	No	%	
Type 1	Intersphentric	38	63.34	38	63.34	1.0NS
Type 2	Transsphentric	21	35	22	36.67	0.85NS
Type 3	Suprasphentric	6	10.01	4	6.67	0.74NS
Type 4	Extra sphentric	6	10	8	13.33	0.76NS

\*multiple response table

**Table No 3:** Descriptive statistics of primary tract according to Parks classification in MRI finding and intra-operative findings

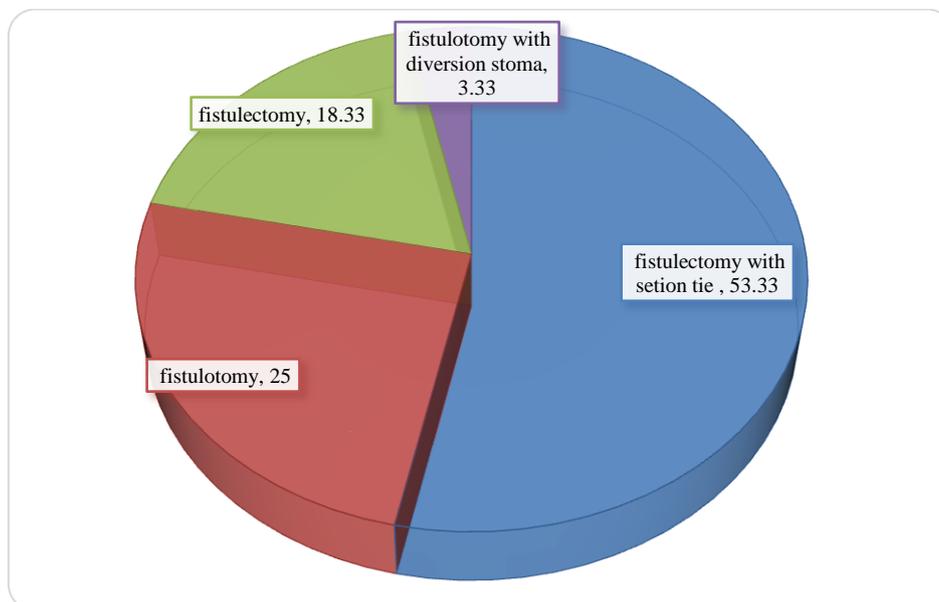
	MRI Fistulography		Intra-operative	
	No.	%	No.	%
Intersphentric	31	51.67	31	51.67
Transsphentric	12	20	12	20
Suprasphentric	2	3.33	1	1.67
Extra sphentric	3	5	4	6.67
Both tract suprasphentric	1	1.67	0	0
Extra, supra	1	1.67	1	1.67
Intersphentric and transsphentric	6	10	6	10
Spura, trans	1	1.67	1	1.67
Supra and intersphentric	1	1.67	1	1.67
Trans and extrsphentric	2	3.33	3	5
	60	100	60	100

**Table No. 4:** Comparison of the cases according to Perianal Abscess

	MRI Fistulography		Intra-operative		P Value LS
	No	%	No	%	
<b>Absent</b>	34	56.67	30	50.00	0.498NS
<b>Present</b>	26	43.33	30	50.00	
Ischioanal	23	38.33	27	45.00	0.81NSS
Ischiorectal	3	5.00	3	5.00	

**Table No. 5:** Comparison of no of cases of abscess between Preoperative MRI and Intro operative findings

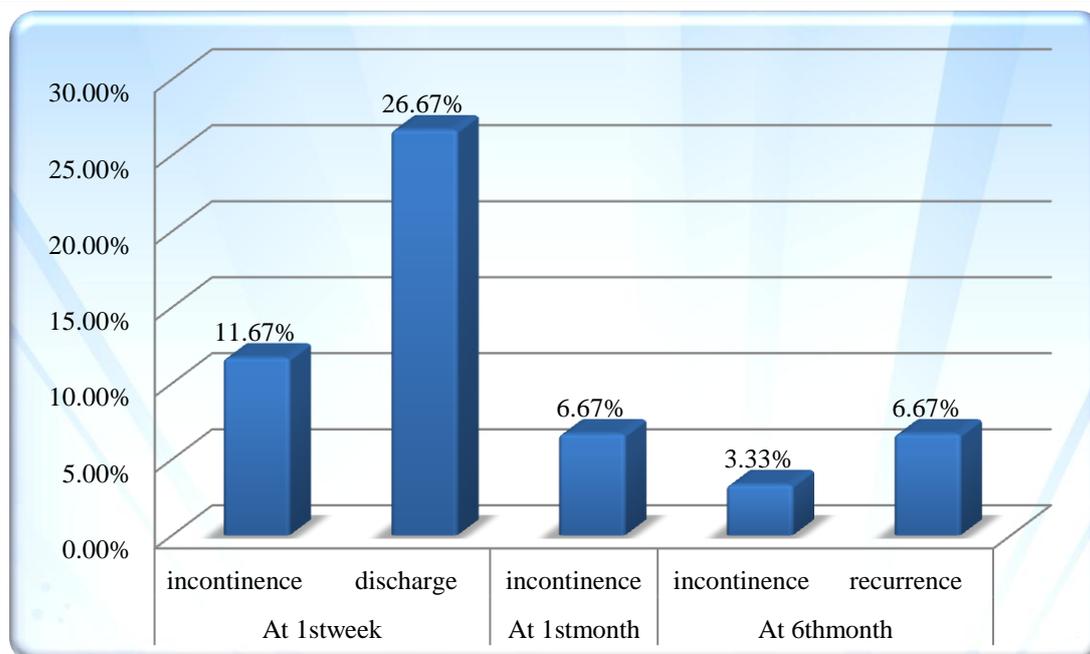
MRI	Present		Intra-operative			
			Absent		Absent	
ABCESS	Present	%	Absent	%	Total	%
Present	26(TP)	86.67	0(FP)	0	26	43.33
Absent	4(FN)	13.33	30(TN)	100	34	56.67
Total	30	100	30	100	60	100.00
Horse Shoe Fistula			Intra-operative			
MRI	Present	%	Absent	%	Total	%
Present	7(TP)	87.5	3(FP)	5.77	10	16.67
Absent	1(FN)	12.5	49(TN)	94.23	50	83.33
Total	8	100	52	100	60	100



**Graph 1:** Comparison

**Table No. 6:** Distribution of the cases according to complication

Complication	No	%
<b>At 1<sup>st</sup> week</b>		
Incontinence	7	11.67%
Discharge	16	26.67%
<b>At 1<sup>st</sup> month</b>		
Incontinence	4	6.67%
<b>At 6<sup>th</sup> month</b>		
Incontinence	2	3.33%
<b>Recurrence</b>	2	3.33%



**Graph 2:** Distribution of cases according to Complication

### Discussion

Role of MRI in evaluation of perianal fistula was first studied by Koelbel et al<sup>5</sup> and was followed by many studies till date. MRI is the optimal technique for distinguishing complex from simple perianal fistulae. MRI allows identification of infected tracks and abscesses that would otherwise remain undetected. Furthermore, radiologists can provide detailed anatomic descriptions of the relationship between the fistula and the anal sphincter complex, thereby allowing surgeons to choose the best surgical treatment, significantly reducing recurrence of the disease or possible secondary effects of surgery, such as fecal incontinence. However, imaging with an external coil alone also provides good results<sup>6</sup>

Initial reports by Lunniss et al<sup>17</sup> suggested a concordance rate of 86% to 88% in detection of fistulous tracks. Later studies have shown up to 100% sensitivity for detecting and grading the primary tract<sup>8</sup>. Some studies have suggested that MRI is more sensitive than even surgical exploration of the tract<sup>9, 10</sup>

The mean age of affected population was 40.78±12.54 years. Maximum numbers of patients were in the age group of 26 to 45 years and there was overwhelming male preponderance. Age group between 20-50 years accounted for maximum

number of cases (68%). This is in agreement with a study in 2011, Waniczek et al<sup>11</sup> Kumar (2015)<sup>12</sup> Majority of patients belonged to the age group of 31-60 years which accounts for 31 (62%) of patients. Same was observed in Shruti (2018)<sup>13</sup> 36% patients are in the age group of 41-50 and a study by Sidhdharth R et al (2018)<sup>14</sup>, nearly similar findings were noted. Most patients with an anal fistula present in the third or fourth decade of life and anal fistulas were uncommon after the age of 60 years.

Among 60 study patients, 11.667% (n = 7) of the patients were females and males were 88.333 % (n= 53). Male preponderance was observed in the study population. The male: female ratio was 7.54:1 This is in agreement with a study by Waniczek et al<sup>1</sup> Shruti (2018)<sup>13</sup> (82% are male patients and 18% patients are female patient.) Female ratio is 11.5:1 which stated that the disease predominantly men were more commonly affected while in 2010, There is a more male dominance in reported series.

In our study, all patients had complain of perianal discharged (100%), 81.67% (n=49) were suffering from pain. 5% (n=3) were suffering from fecal incontinence only and 81.67 % (n=49) were bearing both pain as well as discharge.

These observations corroborates with the observations of Sainio et al<sup>15</sup> who reported that the most common presenting symptom is discharge (65%

of cases), but local pain due to inflammation. In a study by Kumar et al<sup>12</sup> also discharge and external opening were the commonest complaint and were present in all subjects (100%). But the findings were included both as symptoms and signs so there is risk of interpreting them falsely raised as symptoms. Further discharge was found to be present in 50% subjects and pain in 52 % subjects. 8% subjects also reported bleeding per rectus. In a study by Siddhartha R et al<sup>14</sup> 72% patients' pain around the anal region, discharging wound was the presenting complaint in 70%, of the patients. Shruti (2018)<sup>13</sup> 74% Patients had perianal discharge while 66% patients presented with perianal pain. 40% patients had h/o perianal abscess. Most common mode of presentation was discharge.

The Intersphincteric (type 1) was highest in our series accounting for > 60% followed by Transphincteric in MRI and intra-operative. No significant difference was observed among both as per MRI finding type of fistula. These observations corroborate with the study done by Parks et al<sup>16</sup> and., Khera et al<sup>17</sup> Out of a total of 44 fistulae in those 35 patients, 14 (33%) were transsphincteric, 25 (60%) were intersphincteric and three (7%) were extrasphincteric. In 2016, Jadhav et al<sup>18</sup> round 54% of inter-sphincteric Classification of perianal fistulas is also important because treatment differs between different types of fistulous tracks

Comparison of Type of Fistula Primary Tract according to Parks classification in Pre-op MRI Fistulography and intra-operative findings, according to parks classification of Pre operative MRI Fistulography, the Intersphincteric (type 1) was most common followed by Transphincteric in MRI and intra-operative. Out of total 60 no. of cases, 51.67% of belong to intersphincteric MRI Fistulography and intra-operatively both & 20% belongs to transsphincteric category in both. Only 4 cases were having different type.

Out of 4 cases Intro-operatively, that was extra sphincteric among which one case was suprasphincteric in MRI. Out of 6 cases Intro-operatively, that were intersphincteric and transphincteric one case was found as both tract suprasphincteric

No significant difference was observed according to Perianal Abscess in intra-operative and MRI findings. As in study done by Mendoza et al<sup>19</sup> and Torkzad et al<sup>20</sup>, it was assumed that fluid collection larger than 10 mm in diameter is an abscess; whereas a fluid filled tubular structure with a diameter smaller than 10 mm is a fistula. In 2016, Jadhav et al<sup>18</sup> 27% were associated with an ischio-rectal abscess.

No significant differences was observed in the cases present in positions of external openings between Pre operative MRI Fistulography and Intra-operative (P=0.99NS). In a study by Siddhartha R et al 80% of patients posterior opening and 20% of patients anterior opening, so posterior situation was more common which in accordance with our findings Kumar (2015)<sup>12</sup> observed that About 33 (66%) of external openings are posterior to the anal axis of which 26 (52%) followed the Goods all's rule. Shruti (2018)<sup>13</sup> 76% patients had posterior opening while 24% patients had anterior opening, so posterior situation was more common.

Comparison of Horse Shoe Fistula between Preoperative MRI and Intro operative findings and no significant difference was observed among the MRI and Intra-operative. (P=0.798NS) as in MRI (10 cases) 16.67% cases and in intra-operative (8) 13.33% were Horse Shoe Fistula present.

In 2013, Alaat El Essawy<sup>21</sup>, 56 patients were included in the retrospective study. MRI depicted five 5 horseshoe fistulae.

In our study, sensitivity, specificity, PPV, NPV and diagnostic accuracy of MRI in Horse Shoe Fistula were 87.50%, 94.2%, 70%, 98% and 93.33%. In our study, sensitivity, specificity, PPV, NPV and diagnostic accuracy of MRI in abscess were (26/30) 86.67%, (30/30)100 %, (26/26)100%, (30/34)93.33% and (56/60)93.33%.

The results are in agreement with studies in 1996, Beckingham et al<sup>10</sup> MRI had a sensitivity of 97% and specificity of 100% for detection of fistulae. It allowed identification of more secondary tracks and was more accurate in identification of complex fistulae than either digital rectal examination alone or surgical exploration. However, studies by Daabis

et al<sup>22</sup> and Beets-Tan et al<sup>23</sup> have even reported sensitivity of 100. In 2001, Beets-Tan et al<sup>23</sup> The sensitivity and specificity for detecting abscesses, 96% and 97%, respectively; horseshoe fistulae, 100% and 100%, respectively;

Distribution of the cases according to various surgeries for complex fistula in Ano

In this study, Stoma Formation was performed in 2 cases due to multiple opening and fecal incontinence. Fistulectomy with seton tie was mostly performed 53.33% cases followed by Fistulotomy 25% Fistulectomy 18.33%, fistulotomy with diversion stoma 3.33%.

Our findings were concurrence with study conducted by Kumar (2015)<sup>12</sup> observed that Fistulectomy is commonly performed i.e., in about 34 (78%) of cases and the operated wound is healed in a range of 2 weeks to 8 weeks with a mean duration 4 weeks.

Shruti (2018)<sup>13</sup> observed that Fistulectomy and fistulotomy were performed in 39 subjects (78%) and 7 subjects (14%) respectively fistulectomy with primary closure was performed in 1 subject (2%), while seton placement was done in 2 persons (4%). While in study by Siddhartha R et al 84% of patients underwent Fistulectomy, another 6% of patients underwent Fistulotomy, and another 10% underwent Fistulectomy with fissurectomy with sphinctrotomy. Kumar et al<sup>12</sup> fistulectomy was performed in 68% subjects, fistulotomy in 28% subjects and seton placement in 4% subjects.<sup>13</sup>

Distribution of the cases according to complication

In the present study complication associated with fistula 11.67% (n=7) patients were incontinence and 26.67% cases were discharge at 1st week of the operation, at 1st month incontinence was observed in 4 cases (6.67%) and at 6th month 2 cases (3.33%) and 96.67% patients were completely cured after the surgery while 2 cases had recurrence at 6th month. Similar observation was observed in Kumar (2015)<sup>12</sup> observed that the postoperative complications were very minimal, there was recurrence of fistula in 1 case (2%) after 30 days and it was excised again. Shruti (2018)<sup>13</sup>, 90%

patients were completely cured after the surgery while 10% patient had recurrence.<sup>13</sup> In the surgical management of fistulae if one is too aggressive with fistulotomy, cure may be achieved at a cost of incontinence. On the other hand, being too conservative, while striving to maintain continence, will result in recurrence or persistence of the fistula.

### Conclusion

On the basis of observations, we can conclude that Pre-operative MRI Fistulography is a key to success of appropriate management in complex perianal fistula. It not only reduces the complications but also improve the quality of life among these patients.

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