



EVALUATION OF PERIANAL FISTULAS BY USING MR FISTULOGRAPHY IN RURAL POPULATION

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KEYWORDS : Perianal fistula, MRI**INTRODUCTION:**

Perianal fistulas are uncommon and important condition of the gastrointestinal tract that leads to substantial morbidity and commonly encountered condition in routine surgical practice because of its great likelihood to recur, it frequently requires repeated surgical treatments. MRI is the best imaging modality choice for preoperative assessment and helps to accurately demonstrate disease extension and predict prognosis provides information regarding the location of the fistulous tract and pelvic structures which are affected.

To evaluate the diagnostic accuracy of MR fistulogram in preoperative assessment of anorectal fistulas and identify the

- Internal openings, fistulous tracts
- Relationship of perianal fistulas with anal sphincter complex
- Complications like abscesses.

MATERIALS AND METHODS:**Study design:** Hospital-based prospective study**Study Sample:** 40 patients**Equipment:** 1.5 Tesla MRI GE**Inclusion Criteria:**

Clinically suspected patients of perianal fistulas were imaged with different MRI sequences.

Exclusion Criteria:

Claustrophobia, patients with implants, pediatric patients, unwilling patients.

MRI protocol:

Patient was scanned in the supine position

Protocol used following sequences : Sagittal fast spin echo (FSE T2W sequence performed, initially MR imaging provides an overview of the pelvic structures and shows the extent, axis of the anal canal, followed by oblique coronal T1W FSE, oblique axial FAT suppressed, coronal T1 and T2W FSE, oblique T1W FSE.

Perianal fistula location is pointed out with goodsalls rule "Anal clock" is an analogy of axial MR images²: the site and direction of fistulous tracts are cited by clock positions. The 6'o clock position refers to natal cleft, 12'o clock position refers to anterior perineum, 3'o clock position refers to the left lateral aspect and 9'o clock position refers to the right lateral aspect. It is important to understand the anatomy of anal sphincters, their functioning and causes of perianal fistulas before planning the treatment strategy².

RESULTS

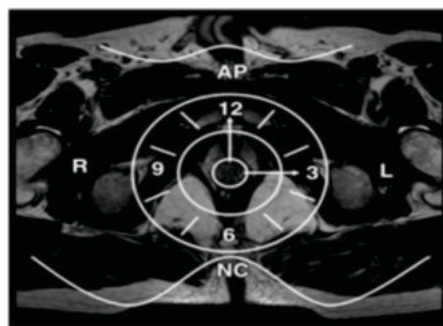
- 40 cases were included in this study.
- Out of 40 cases, based on St James's university hospital classification: 21 (52.5%) had grade 1 /simple linear intersphincteric fistula; 4 (10%) had grade 2/ intersphincteric fistula with an abscess or secondary tract; 2 (5%) had grade 3 or transsphincteric fistula;

10(25%) had grade 4 or transsphincteric fistula with an abscess or secondary tracts in the ischioanal or ischioanal fossa ; 3 (7.5%) had grade 5/supralelevator and translevator disease.

- Out of 40 cases, according to Parks classification: 24 (60%) had intersphincteric fistula, 15 (37.5%) had transsphincteric fistula and 1 (2.5%) had extrasphincteric.
- Out of 40 cases, 32 cases are males & 8 cases are females, of these out of 32 males, 17 had intersphincteric fistula, out of 8 females, 5 had intersphincteric fistula; out of 32 males, 13 had transsphincteric fistula; out of 8 females, 3 had transsphincteric fistula; out of 32 males, 2 had supra & extrasphincteric fistula respectively. The common age group of 20- 40 years (60%) and the frequent location of the fistulous internal opening was posteriorly at 6 o'clock position¹.

Imaging Findings:

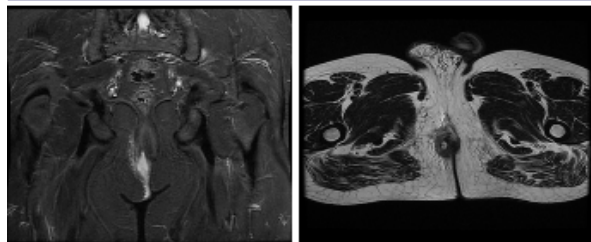
Perianal fistulas were graded by Parks, St James university hospital classification and located by Goodsall's rule.

**1) Grade I Intersphincteric perianal fistula on right side :**

(1A) Axial T2 and (1B) coronal STIR hyperintense linear fistulous tract measuring about 2cm in length and 1-2mm in diameter noted in the perianal region on right side.

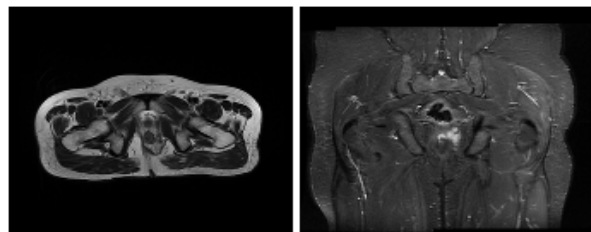
**2) Grade 2 Intersphincteric fistula with abscess or secondary tract:**

(2B) Axial T2 and (2A) coronal STIR hyperintense tract extending from the collection in right paramedian perineal region superiorly into the intersphincteric region and opening at 11 o'clock position. No secondary tracts are seen. There is soft tissue edema around the fistula.



3) Grade III Transsphincteric fistula:

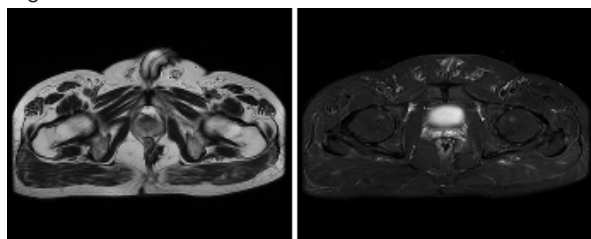
(3A) Axial T2 & (3B) coronal STIR hyper intense linear fistulous tract noted with external opening in the left perianal region and is extending into trans sphincteric plane on left side, crossing the midline with its internal opening in the 6-7'o clock position of anal canal and another internal opening in the transsphincteric plane at 3'o clock position on left side. No evidence of any abscess/secondary tract.



(4) Grade Iv Transsplincteric Fistula With Left Ischioanal Abscess:

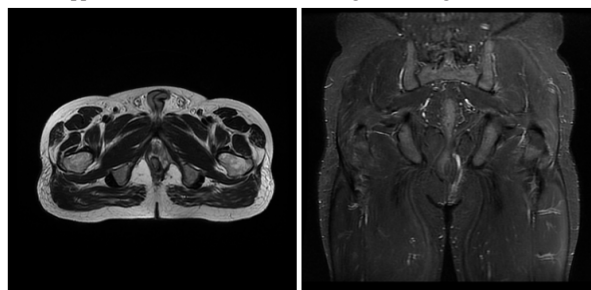
(4A) Axial T2, (4B) coronal STIR hyper intense linear fistulous tract with internal opening at 6 o' clock position & external opening in the perineal region on left side.

Evidence of a well defined collection noted in the ischioanal region on left side.



(5) Transsphincteric supralelevator fistula with translevator extension (Grade V):

(5A) Axial T2, (5B) CORONAL STIR hyperintense tract with T2 hypointense wall seen in left perianal region piercing the anal sphincter complex at 5 o'clock position and internal opening at 6 o' clock position in the anal canal. The tract is traversing posteroinferiorly upto left gluteal region with cutaneous external opening. Secondary tract seen from the fistula just proximal to its internal opening traversing superiorly crossing the levator ani and ends blindly at periprostic region on left side. Length of the tract is about 8.5cm from anal verge. T2 and STIR hyperintense area seen in intergluteal region.



DISCUSSION

- Morris et al., found that about 70% of all the perianal fistula were intersphincteric fistulas, While transsphincteric fistulas constituted 20% of total. In this

study out of 40 patients, the most commonest type of fistula was intersphincteric type which is followed by trans sphincteric type, our study results are in consistent with Morris et al.

- Ozdil Baskan et al., found that grade 1 fistula were common, second most common type is grade III fistulas based on St James 's University hospital classification system. In present study we found that 52.5% of all perianal fistulas were grade 1 fistula and 25% were grade IV fistulas, which are consistent with Ozdil baskan et al.,
- Morris et al., found that intersphincteric type of fistula is the commonest in their study. In present study out of 40 cases 60% of all perianal fistulas are intersphincteric fistula. These results are consistent with morris et al.,
- On correlating St jame's s university hospital grading with the sex of the patients under study, it was found that among males and females ,intersphincteric fistulas are the commonest followed by trans sphincteric type.
- Halligan et al., who found that the disease predominantly strikes young adults, and that mens are more commonly affected. In this study, out of 40 cases, 38 males and 2 females are presented with perianal fistula.

CONCLUSION

Perianal fistulas are chronic and recurrent, it may present with complications like secondary tracts and abscess cavities.

During evaluation of these findings you are likely to injury external sphincter and result in fecal incontinence. So complete preoperative assesment of perianal fistulas is required and it is important to establish the relationship of sphincter with the fistulous tracts. Detailed understanding of anatomy of pelvic structures is needed for identification and management of anorectal fistulas.

MRI plays major role in preoperative assessment. MRI provides precise location of the fistulous tract, and its relationship pelvic floor and the sphincter complex and helps in the identification of secondary tracks and abscesses.

Role of radiologist is to provide an accurate details of type of tracts and its relations to regional anatomy and to allow adequate surgical planning.

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