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Evaluation of Perianal Fistulae by Using Mr Fistulography in Rural Population.

Dr. Rajesh Kumar pradhan1, Dr.B.R. Nagaraj, MDRD, DMRD, FICR2.
1(Second year postgraduate, Dept of Radio-Diagnosis, GEMS and Hospital, Andhra Pradesh).
2(Professor and HOD, Dept of Radio-Diagnosis, GEMS and Hospital, Andhra Pradesh).

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ABSTRACT

Background: The perianal fistula are uncommon and important condition of the gastrointestinal tract that leads to significant morbidity and commonly encountered condition in routine surgical practice often requiring repeated surgical treatments due to its high tendency to recur. MRI is the best imaging modality choice for preoperative assessment and helps to accurately demonstrate disease extension and predict prognosis provides information about the location of the fistulous track and the affected pelvic structures.

Aim: Evaluates the different types and frequencies of perianal fistulae, the extent of the disease and associated complications using magnetic resonance imaging.

Materials & Methods: 40 patients with clinical suspicion of perianal fistulae were imaging was performed with different mri sequences. The findings were assessed and analyzed.

Results: Out of 40 cases, 32 cases are males and 8 cases are females, of these 17 males had intersphincteric fistula, 5 females had intersphincteric fistula; 13 males had transsphincteric fistula; 3females had transsphincteric fistula; 2 males had supra and extrasphincteric fistula respectively. The common the age group are 20- 40 years (60%) and the location of the internal opening of the fistula was posteriorly at 6 o'clock position.

Conclusion: In our study, perianal fistulae were more commonly seen in males and of 20-40 years age group. Intersphincteric types of perianal fistulae were more frequent. An incomplete evaluation of these complications can result in residual and recurrent disease. Hence, a complete preoperative perianal fistula assessment is warranted.Also, to prevent injury to the external sphincter; it is necessary to establish the relationship of the sphincter with the fistulous tracks. MRI satisfies all these needs of operating surgeons and helps in the planning of surgery.

I. INTRODUCTION:

A fistula is defined as an abnormal connection between two structures or organs or between an organ to the surface of the body. here, the term anal fistula referred as abnormal connection between anal canal and skin of the perineum. The perianal fistulas are uncommon and important condition of the gastrointestinal tract that leads to significant morbidity[3]. The fistulas can be inter sphincteric, trans sphincteric, extra sphincteric or supra sphinctericIt is important to understand of anorectal anatomy is needed for identification and management of anorectal fistulas[1]. Successful surgical management requires an accurate preoperative assessment of the primary fistulas course and the site of any secondary extension or abscesses. Mri aid in identification of primary and secondary tracks complications like abscesses and it also clearly demonstrate the relationship of fistulae to the pelvic diaphragm and the ischiorectal fossae. Two main classification for perianal fistulas are park's and st james'S university hospital classification are used.

II. AIMS & OBJECTIVES:

Evaluate the diagnostic accuracy of MR fistulogram in preoperative assessment of anorectal fistulas and identify the internal openings, fistulous tracks and the relationship of perianal fistulas with anal sphincter complex and other complications like abscesses.

III. MATERIALS AND METHODS:

Study design: Hospital-based prospective study
Study Sample: 40 patients
Inclusion criteria: 40 patients with clinical suspicion of perianal fistulae were imaging was performed with different mri sequences.
Equipment: 1.5 Tesla MRI GE.

MRI protocol:
Patient was scanned in the supine position

Protocol used following sequences : Sagittal fast spin echo (fse T2- weighted sequence

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performed, initially MR imaging provids an overview of the pelvis and showing the extent and axis of the anal canal ,followed by oblique coronal T1W FSE, FAT suppressed oblique axial and coronal T1and T2WFSE, oblique T1WFSE.

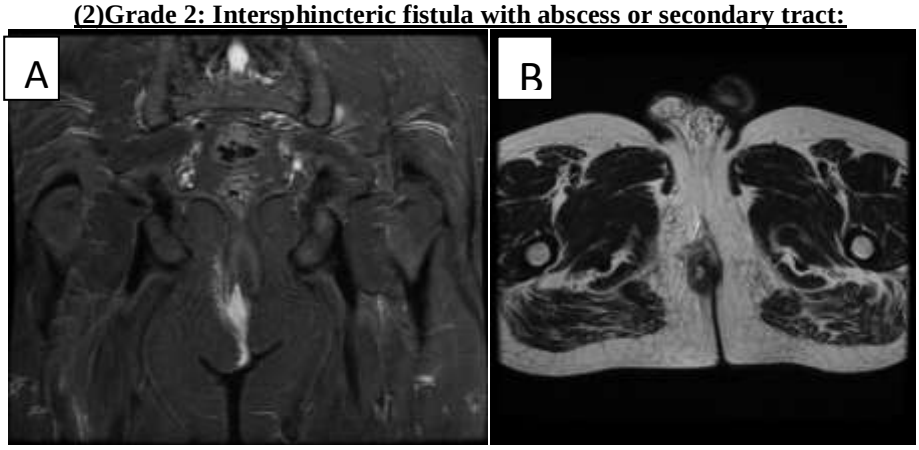
Peri anal fistula location is pointed out with goodsalls rule "Anal clock" is an analogy of axial MR images[2] :the site and direction of fistulous tracts are cited by clock positions .The 6'o clock position refers to natal cleft ,12'o clock position refers to anterior perineum, , 3'o clock position refers to the left lateral aspect and 9'o clock positionrefers to the right lateral aspect.It is needed to understand the anatomy and function of anal sphincters and the causes of perianal fistulas before planning the treatment strategy[2].

IMAGING FINDINGS: Perianal fistulas were graded by perk's ,St jame's university hospital classification and located by goodsalls rule.

(1)Grade 1: Simple linear intersphincteric fistula:

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

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



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

(3)Grade III Transsphincteric fistula :

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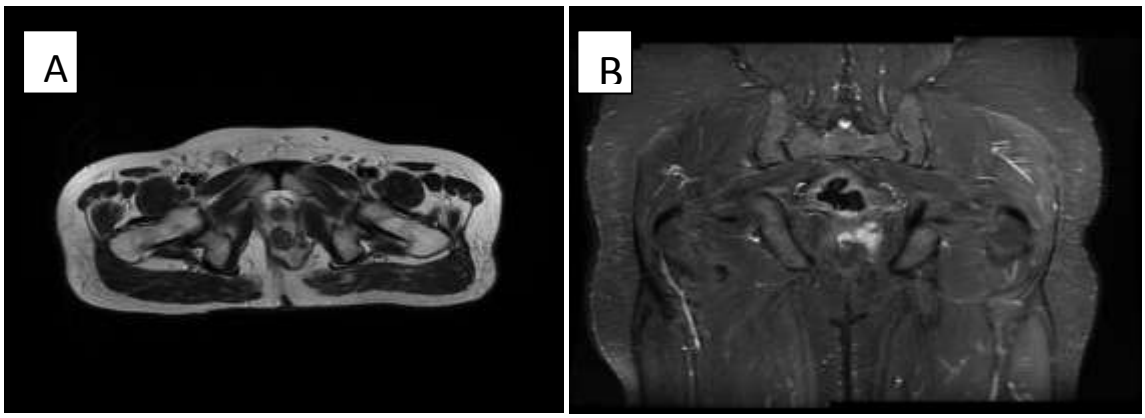
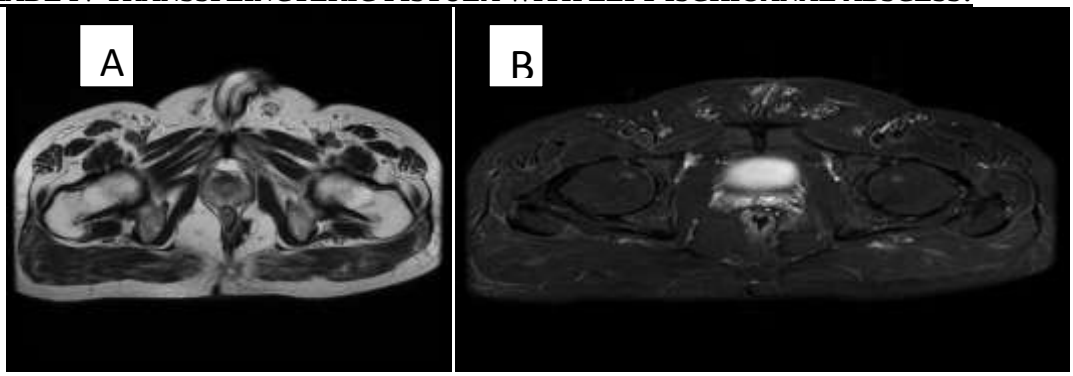


Axial T2 & (B) coronal STIR hyperintense linear fistulous tract noted with external opening in the left perianal region and is extending into trans sphincteric plane on left side, crossing the midline with its internal opening in the 6-7'o clock position of anal canal and another internal opening in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

(4)GRADE IV TRANSSPLINCTERIC FISTULA WITH LEFT ISCHIOANAL ABSCESS:



(A) Axial T2, (B) coronal STIR hyperintense linear fistulous tract with internal opening at 6 o' clock position & external opening in the left perineal region.
Evidence of a well defined collection noted in the left ischioanal region.

(5)Transphincteric supralevator fistula with translevator extension (Grade V) :

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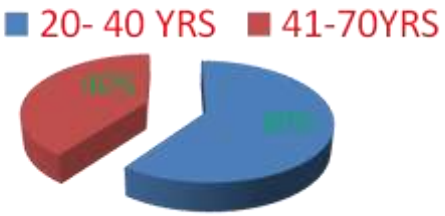
(A)Axial T2, (B) CORONAL STIR hyperintense tract with T2 hypointense wall seen in left perianal region piercing the anal spincter complex at 5 o clock position and internal opening in anal canal at 6 o' clock position. The tract is traversing posteroinferiorly with cutaneous external opening in left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

SEX DISTRIBUTION			
GRADING	MALES	FEMALES	TOTAL
INTERSPHINTERIC	24		24
TRANSSPHINTERIC	13	2	15
SUPRASPHINTERIC	0		0
EXTRASPHINTERIC	1		1
	38	2	40

PIE CHART SHOWING AGE DISTRIBUTION



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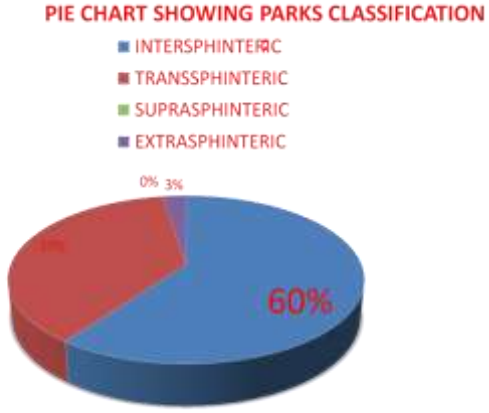
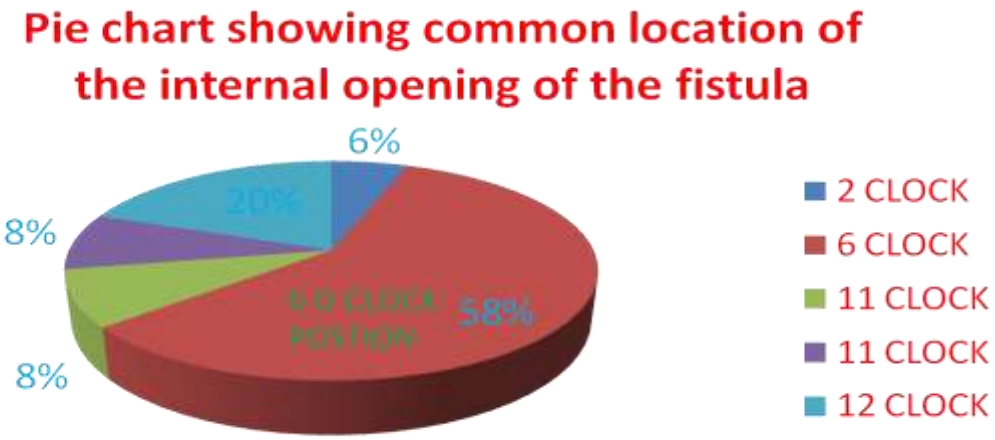
St James's Classification	TOTAL	PERCENTAGE
Grade 1: Simple Linear Intersphincteric Fistula	21	52.5%
Grade 2: Intersphincteric Fistula with Abscess or Secondary Track	4	10%
Grade 3: Trans-sphincteric Fistula	2	5%
Grade 4: Trans-sphincteric Fistula with Abscess or Secondary Track within the Ischiorectal Fossa	10	25%
Grade 5: Supralevator and Translevator Disease.	3	7.5%





IV. 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 or simple linear intersphincteric fistula;4 (10%) had grade 2 or intersphincteric fistula with an abscess or secondary track;2 (5%) had grade 3 or transsphincteric fistula;10(25%)had grade 4 or transsphincteric fistula with an abscess or secondary tracks in the ischiorectal or ischioanal fossa ;3 (7.5%)had grade 5 or supralevator and translevator disease.

Out of 40 cases, based on parks classification: 24(60%) had intersphincteric fistula, 15(37.5%)

had trans sphincteric fistula and 1 (12%) had extrasphincteric .

Out of 40 cases, 32 cases are males and 8 cases are females, of these 17 males had intersphincteric fistula, 5 females had intersphincteric fistula; 13 males had transsphincteric fistula; 3females had transsphincteric fistula:2 males had supra and extrasphincteric fistula respectively. The common age group of 20- 40 years (60%) and the common location of the internal opening of the fistula was posteriorly at 6 o'clock position[1].

V. DISCUSSION:

- Morris et al., found that about 70 % of all perianal fistula were intersphincteric fistulas,While transsphincteric fistulas constituted 20% of total .In this study out of 40 patients, the most prevalent type of fistula was intersphincteric type followed by trans sphincteric type, our results are consistent with Morris et al.,
- Ozdil Baskan et al., found that grade 1 fistulas were common ,second most common type is grade III fistulas based on St james 's University hospital classification system. In this 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 to be the commonest in their study. In this 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 men's are more commonly affected. In this study, out of 40 cases, 38 males and 2 females are presented with perianal fistula.

VI. CONCLUSION:

Perianal fistulas are may be chronic and recurrent, it may present with complications like secondary tracks and abscess cavities. In complete evaluation of these complications can result in injury to external sphincter and result in fecal incontinence .so complete preoperative evaluation of perianal fistulas is required and it is necessary to establish the relationship of sphincter with the fistulous tracks.Detailed understanding of anorectal anatomy is needed for identification and management of anorectal fistulas.Magnetic resonance imaging important role in preoperative assessment. Mri provides precise location of the fistulous track, 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 the type of tracks and its relations to regional anatomy and to allow adequate surgical planning.

REFERENCES:

[1]. John Morris, John A. Spencer, N. Simon Ambrose MR Imaging Classification of Perianal Fistulas and Its Implications for Patient Management. RadioGraphics 2000; 20:623–635.

[2]. Baskan O, Koplay M, Sivri M, Erol C. Our Experience with MR Imaging of Perianal Fistulas. Pol J Radiol. 2014 Dec 24;79:490-7.

[3]. Halligan S, Stoker J. Imaging of fistula in ano. Radiology. 2006 Apr;239(1):18-33. PMID: 16567481.

[4]. Lunniss PJ, Barker PG, Sultan AH, Armstrong P, Reznek RH, Bartram CI, Cottam KS, Phillips RK. Magnetic resonance imaging of fistula-in-ano. Dis Colon Rectum. 1994 Jul;37(7):708-18. PMID: 8026238.

[5]. de Miguel Criado J, del Salto LG, Rivas PF, del Hoyo LF, Velasco LG, de las Vacas MI, Marco Sanz AG, Paradela MM, Moreno EF. MR imaging evaluation of perianal fistulas: spectrum of imaging features. Radiographics. 2012 Jan-Feb;32(1):175-94.. PMID: 22236900.