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Role of magnetic resonance imaging in evaluation of carcinoma cervix

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Abstract

Background: Cervical cancer is the most frequent genital cancer among women in underdeveloped nations. Magnetic resonance imaging (MRI) is widely acknowledged as a preferred imaging modality for assessing parametrical invasion, tumor size, lymph node metastases, assessing the key prognostic variables, and selecting a therapeutic plan.

Aims and objectives: To determine the efficacy of MRI in determining tumour size, parametrium involvement, involvement of pelvic sidewalls and surrounding organs, and nodal status.

Materials and methods: Data for the study were collected during a 12-month period (1st October 2020 to 30th September 2021). A total of 30 patients were studied, the majority of whom were referred from the department of Gynaecology and surgery. The study makes use of a 1.5 TESLA MRI scanner and an MR D-13 channel equipment from Siemens.

Results: The sensitivity of MRI to detect stage IV cancers is 100%, followed by stage III (77.7%) and stage II (87.5%). However, MRI has no role in stage I tumors.

Conclusion: Magnetic resonance imaging in carcinoma cervix offers a high sensitivity for distinguishing between different stages of the illness. In addition to

tumor size and local extension, MRI provides details on abdominopelvic lymphadenopathy and metastasis, as well as the risk of lung metastasis if pleural effusion or basal lung lesion were present.

Keywords: Adenocarcinoma,Cervicalcancer, Squamous Cell Carcinoma

Introduction

Cervical cancer accounts for 16.5% of all cancer cases in Indian women, making it the second most frequent type of cancer.Cervical cancer is an important condition for extensive research due to its multifactorial cause, the potential for prevention, and the treatment options.

Aims and objectives

To determine the efficacy of MRI in determining tumoursize, parametrium involvement, involvement of pelvic sidewalls and surrounding organs, and nodal status

Materials & Methods

Data for the study were collected during a 12-month period (1st October 2020 to 30th September 2021). A total of 30 patients were studied, the majority of whom were referred from the department of Gynaecology and surgery. The study makes use of a 1.5 TESLA MRI scanner and MR D-13 channel equipment from Siemens.

Selection criteria

Inclusion criteria

- Patients were referred with a history of abdominal pain, vaginal bleeding, and white discharge.
- Patients with a cervical cancer diagnosis
- Patients with known cervical pathology
- Patient with recurrent tumour after resection or chemoradiation

Exclusion criteria

• All patients who refused to participate in the trial.

Results

A total of 30 individuals with a history of abdominal pain, vaginal bleeding, and white discharge were investigated. >60 was the most common age group.

Figure1: age distribution

Age in years	No of patients	Percentage
<40	3	10
41-50	9	30
51-60	8	26.6
>60	10	33.3

Chart 1: age distribution percentage

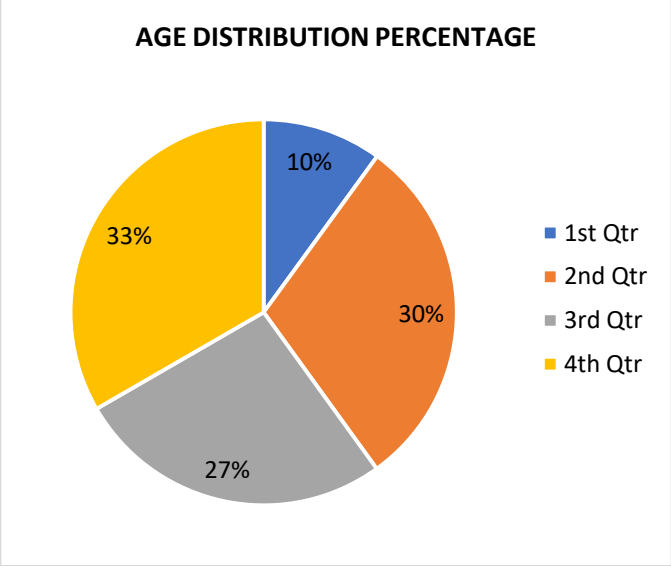

Table 2: common presenting symptom

Symptoms	No: of patients	Percentage
Abdominal pain	26	86.6
Bleeding pv	28	93.3
White discharge	26	86.6

Chart 2: common presenting symptom

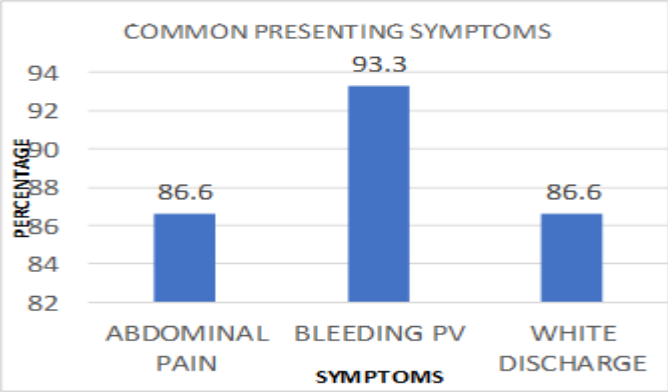

Table 3: menstrual status

Menstrual status	No of patients	Percentage
Premenopausal	13	43.3
Post-menopausal	14	46.6
Post hystrectomy	3	10

Chart 3: menstrual status

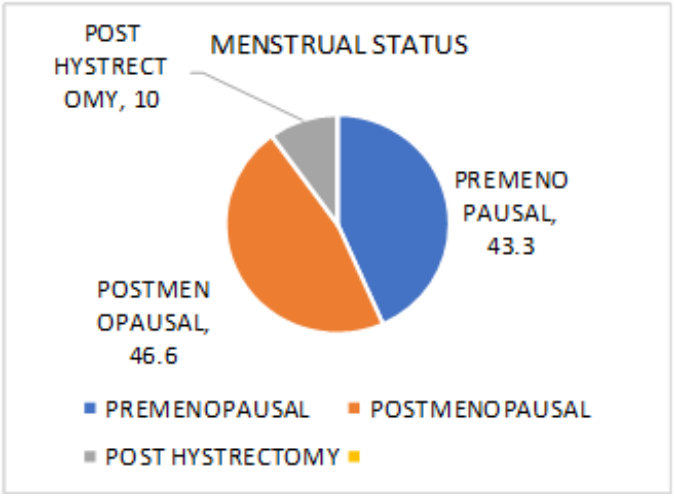

Table 4: histopathology

Histopathology	No of patients
Squamous cell carcinoma	27
Adenocarcinoma	3

Chart 4: histopathology.

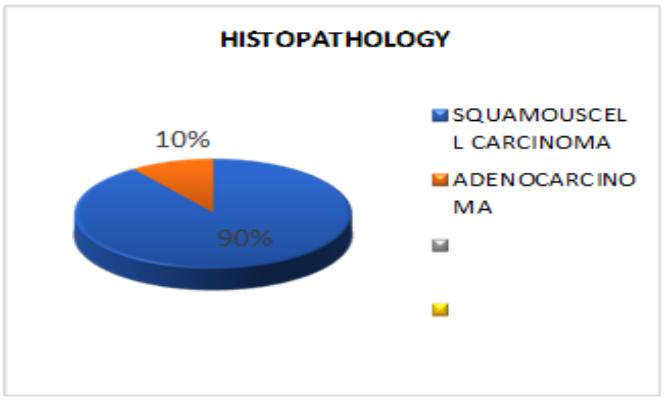

Table 5: assessment staging of cervical carcinoma on mri (Figo)

Staging	No of positive out of 30	Histopatho-logicallyproven	Percentage
Stage 1	0	0	0
Stage2	8	7	87.5
IIa	0		
IIb	8		
Stage 3	9	7	77.7
IIIa	5		
IIIb	3		
Stage 4	13	13	100

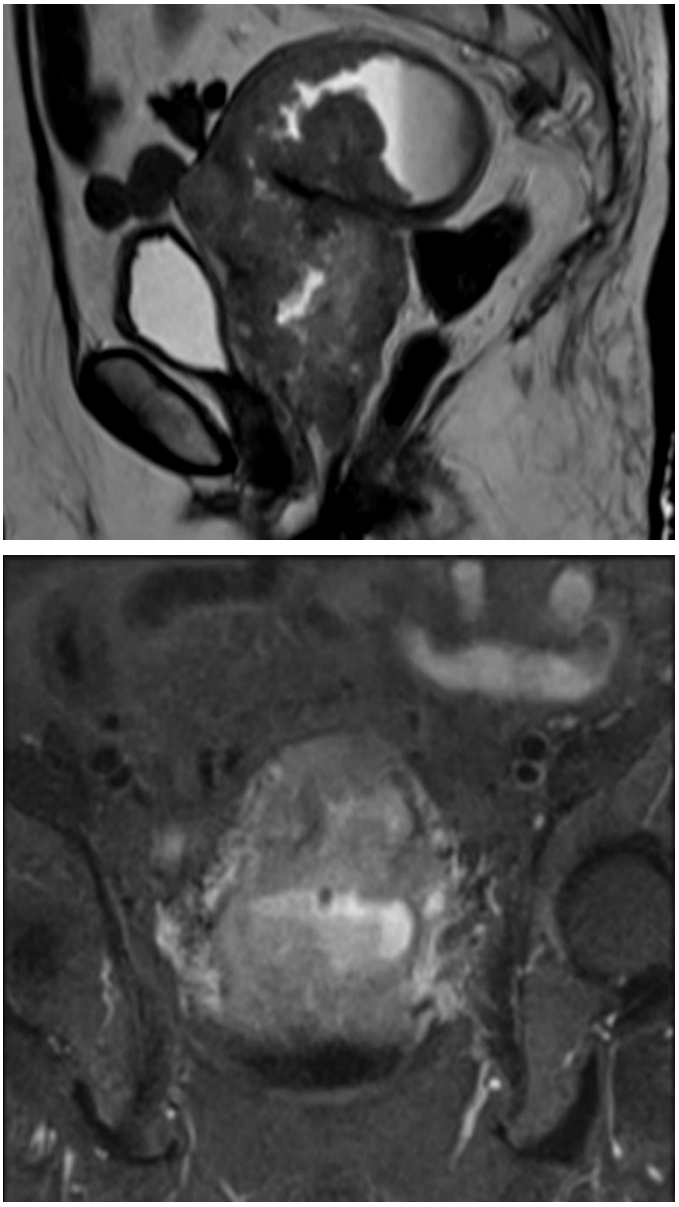

Figure 5: Ill defined fungating mass lesion with epicentre in cervix with involvement of uterus & lower 1/3rd of vagina with extension into adjacent parametrium & hematometra

– STAGE III B

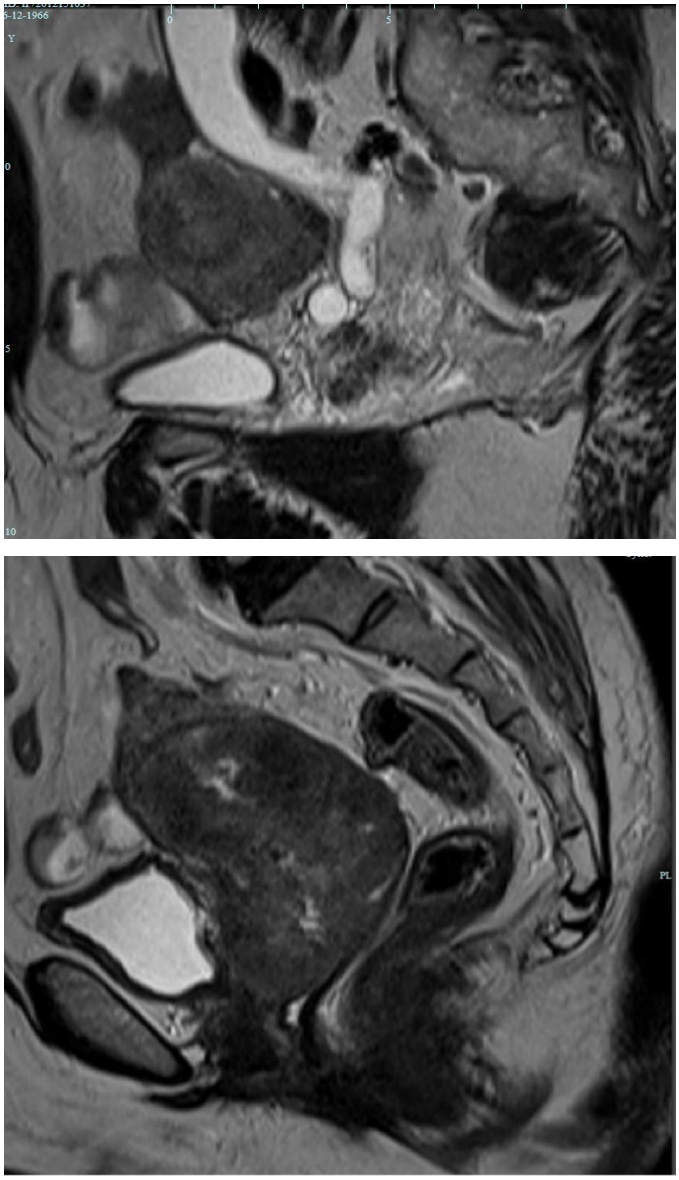

Figure 6: With its epi Centre mostly in the cervical area and its expansion into the body of the uterus, the heterogenous signal intensity lesion invades the posterior wall of the bladder and infiltrates the left ureter, causing mild to moderate hydroureteronephrosis. –

STAGE IV a

Discussion

Squamous cell carcinoma was the most common pathological kind of the analysed cervical mass in this study, accounting for 90% of the total studied cervical malignancy. This incidence was nearly compatible with that of Collettini[1] (2011) and Sahdev[2] (2007), who

reported that approximately 80-90% of cervical carcinomas are squamous cell carcinomas. Our incidence was also comparable to that of Shweel MA[3], who reported that approximately 73.3% of cervical carcinomas are squamous cell carcinomas.

According to Sheu (2001)[4], MRI has an accuracy of 83.8 and 96.7% in diagnosing the stage of cervical cancer and separating operable (or = stage IIA) from advanced disease (> or = stage IIB).

Our findings are also consistent with the findings of a recent study by Nilu[5] (2012), who found that the overall accuracy of MRI in staging cervical cancer was 89.3%.

Conclusion

In the current study, MRI is beneficial for detecting accurate staging of cervical carcinoma. In situations where MRI staging is confirmed by biopsy, the primary treatment is surgery, radiotherapy, and chemo radiation. Though the results demonstrated that MRI is effective for assessing the amount of disease, the absence of invasion meant that MRI was safe enough to employ without fear of under staging. Histological and MRI tumour bulk have a strong association. MRI is the most accurate single imaging examination for determining tumour location, tumour size, stromal invasion depth, and extension into the lower uterine tract.

The MRI also revealed information about the abdominopelvic lymphadenopathy and metastasis, as well as the likelihood of lung metastases if pleural effusion or basal lung lesion were present.

References

1. Collettini F, Hamm B, Uterine cervical cancer: Preoperative staging with magnetic resonance imaging. Radio loge. 2011l; 51:589-95.

2. Sahdev A, Sohaib SA, WeNaden AE, Shepherd JH, Reznek RH, The performance of magnetic resonance imaging in early cervical carcinoma: A long-term experience. Int J Gynecol Cancer. 2007; 17:629-36.

3. Shweel MA, Abdel-Gawad EA, Abdel-Gawad EA, Abdelghany HS, Abdel-Rahman AM, Ibrahim EM. Uterine cervical malignancy: diagnostic accuracy of MRI with his topathologic correlation. Journal of clinical imaging science. 2012 Jul 28;2.

4. Sheu M, Chang C, Wang J, Yen M, MR staging of clinical stage I and IIa cervical carcinoma: A reappraisal of efficacy and pitfalls. Eur J Radiol. 2001; 38:225-31.

5. Nilu MD, Vinay K, Atul S, Amal CK, Debabrata B, Utpal B, Evaluation of carcinoma cervix using magnetic resonance imaging: Correlation with clinical FIGO staging and impact on management. J Med Imaging Radiat Oncol. 2012; 56:58-65.