MRI in diagnosis of uterine carcinoma

Thesis

Submitted for partial fulfillment of the MD degree of
Radiodiagnosis

By

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Tarek Wahby

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1. INTRODUCTION AND AIM OF THE WORK

Cancer cervix is the third most common gynecologic malignancy accounting for 6% of all malignancies in women. Endometrial carcinoma is one-third as common as cervical carcinoma as usually presents with postmenopausal bleeding **(Mitchell et al., 1998).**

Ultrasound and C.T staging is of limited use in early cases which comprises the majority of patients with uterine carcinoma **(Thurner., 1992).**

Accurate staging of the tumor is very important in managing patients with cervical cancer **(Desouza et al., 1998).**

MRI has the ability to demonstrate anatomy in three orthogonal planes, each of which have specific advantages in the assessment of the cervix this can be a potentially useful method when staging tumors, selecting and planning the treatment to be employed **(Ebner et al., 1994).**

The aim of this work is to emphasize the role of MRI in the diagnosis, work up and post treatment monitoring of the patients with uterine carcinoma in some selected cases.

2. ANTATOMY OF FEMALE GENITAL SYSTEM

3. PATHOLOGY OF UTERINE CARCINOMA

4. MR EXAMINATION OF FEMALE GENITAL SYSTEM

5. PATIENTS AND METHODS

30 cases will be examined by MRI without and with contrast if needed.

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List of Abbreviations

CBC	Complete blood picture
CIN	Cervical Intra epithelial Neoplasia
CSE	Conventional Spin Echo
CT	Computerized tomography
D & C	Dilatation and curettage
ETL	Echo train length
FIGO	International Federation of Gynecologists and obstetricians.
FSE	Fast Spin Echo
Gd-DTPA	Gadolinium Dimeglumine Thiopentate Acetate
GE	General Electric
Gn RH	Gonadotrophic releasing hormone
HPV	Human papilloma virus
IM	Intramuscular
IVP	Intra venous pyelography
JZ	Junctional zone
KV	Kilo volt
LN	Lymph node
MAS	Milli Ampere Second
MRI	Magnetic Resonance Imaging
Pap	Papa Nikolaou
SE	Spin echo
STIR	Short Inversion Time Inversion – recovery

T units	Tesla units
T_1 WI	T_1 weighted image
T_2 WI	T_2 weighted imaged
TE	Time of Echo
TR	Time of repetition
TVS	Trans vaginal sonography
U/S	Ultra sound
USA	United states of America

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Case (1); (Fig. 16 A,B,C)

47 years old female patient presented with postmenopausal bleeding.

CT

Endometrial cavity shows hypodense lesion (A).

MRI

The endometrium shows small soft tissue mass lesion 2 X 1 X 1 cm being mixed signal on T2W1 with intact junctional zone (B) with mild heterogenous post contrast enhancement(C).No cervical or vaginal extension. No Pelvic lymph adenopathy.

MRI diagnosis

Stage IA endometrial carcinoma.

Operation

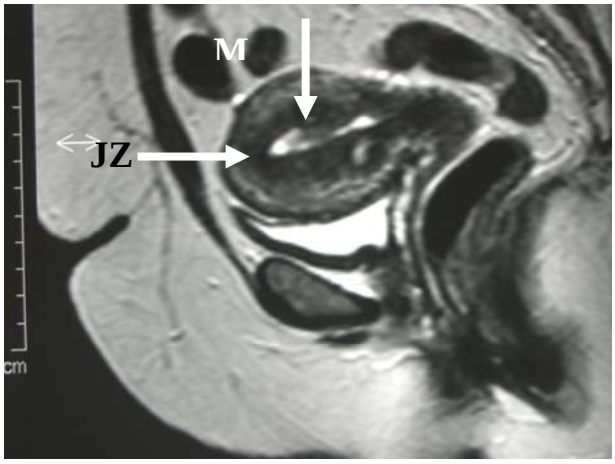
Laparotomy and surgical staging.

Final diagnosis

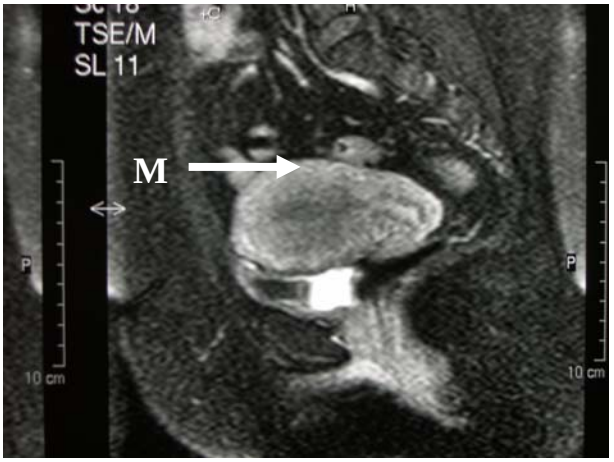
Stage IA endometrial adenocarcinoma with negative LN malignant infiltration.

A

B



C



(Fig. 16) : Stage IA endometrial carcinoma. endometrium (E), mass (M), junctional zone (JZ).

A- Axial CT.

B- Sagittal T_2WI

C- Sagittal T_1 post contrast fat suppression