Ain Shams University
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Role of Magnetic Resonance Imaging in Staging of Cervical Carcinoma

Thesis
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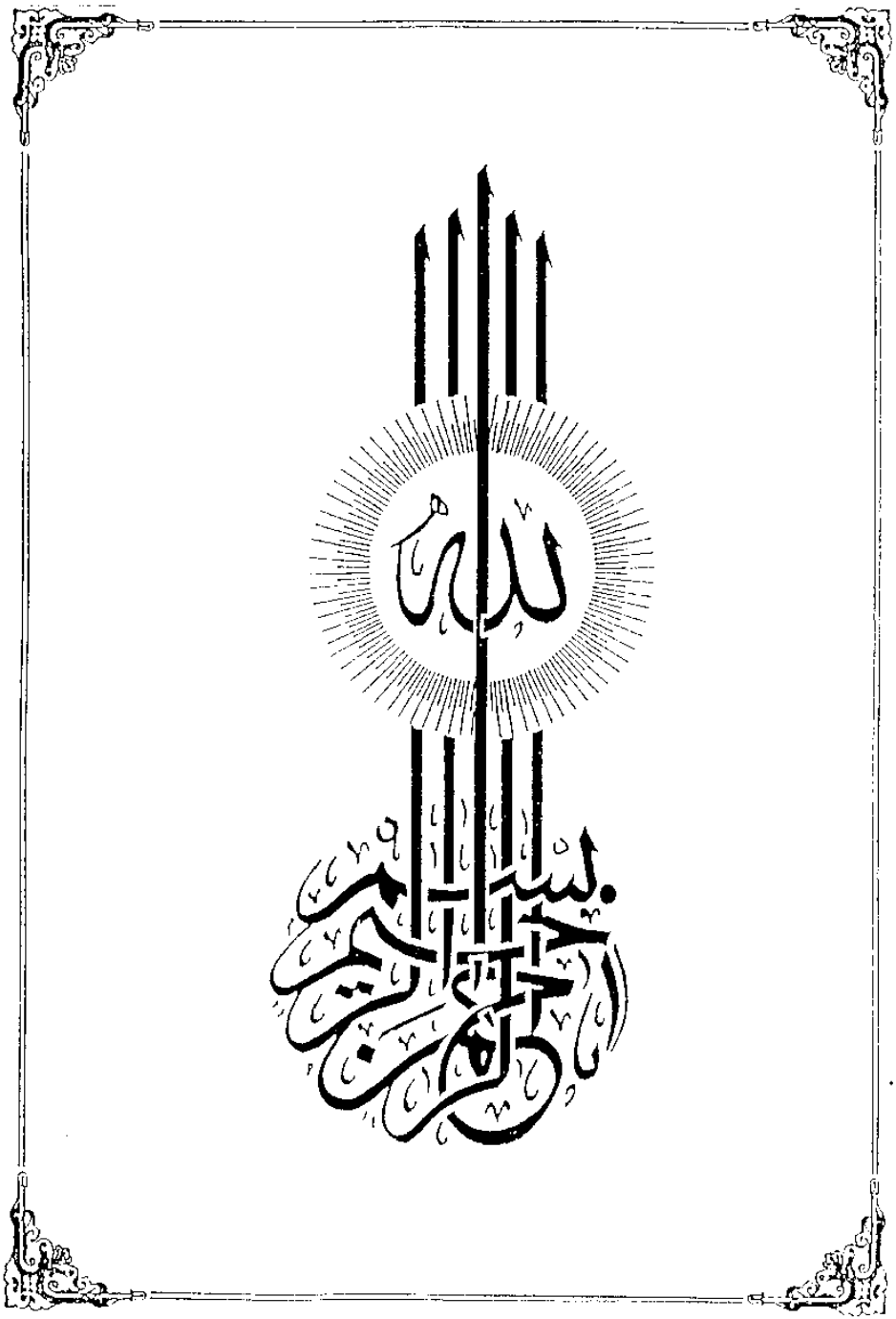

بسم الله الرحمن الرحيم

" قالوا سبحانك لا علم لنا إلا ما علمتنا انك أنت العليم الحكيم "

صدق الله العظيم

البقرة ٣٢

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INTRODUCTION & AIM OF WORK

Cervical carcinoma is the third most common gynecologic malignancy, with 13,500 new cases per year in the United States and 6000 deaths. However, it is the most common malignancy in women under 50 years of age. Patients usually present with vaginal bleeding or discharge, and are clinically categorized according to the FIGO system. The prognosis is determined primarily by (a) the stage of the disease, (b) the histologic grade of the tumor, (c) tumor size (transverse diameter), (d) tumor location within the cervix (exocervix versus endocervix), (e) the depth of stromal invasion, (f) adjacent tissue extension, and (g) the presence of lymph node metastases *(Hricak and Papovich, 1992).*

Carcinoma of the uterine cervix is the fourth most common cancer in women, following carcinoma of the breast, colorectum, and endometrium. The incidence peak in middle age, and ranges from 10 to 100 new cases / 100,000 population / year worldwide, depending on the socioeconomic status of the country. The most important prognostic factors in cervical cancer are the size of the primary tumor, lymph node involvement, infiltration of the connective tissue layer between the cervix and the parametrium, and exophytic growth. All these factors can be studied with MRI, and MRI is rapidly gaining an importance in the diagnosis workup, and post-treatment monitoring of patients with this disease *(Ebner et al., 1994).*

Cervical carcinoma represents a significant health care issue in women. It is among the more common gynecologic malignancies, and its incidence has been increasing. This is believed to be related to the increasing incidence of papilloma and herpes viral infection, which is thought to be a significant risk factor for the disease. The most common form of cervical cancer is squamous cell carcinoma, representing 90% of all cases *(Schnall, 1994).*

Noninvasive radiological imaging studies had been of limited value in pre-treatment evaluation of cervical cancer until the refinement of CT and MRI. CT effectively images the abdomen and thorax in the transverse plane and allows simultaneous needle biopsy of lesions. Because CT cannot discriminate between cancer and normal soft tissue of the cervix and uterus, CT is limited in the evaluation of early cervical cancer (stage IB to IIB), with its value increasing with advancing disease. MRI has high-contrast resolution and multiplanar imaging capability MRI is a valuable modality for determining tumor location, tumor size, degree of stromal penetration, vaginal extension, parametrial extension, and lymph node status. All of these indices help to determine the optimal mode of therapy and identify patients who are operative candidates *(Subak et al., 1995).*

Magnetic resonance imaging (MRI) provides unparalleled soft tissue contrast in the female pelvis. Although ultrasound remains the most optimal modality for detecting obstetric abnormalities, MRI

has proved its value in many applications and should be the modality used in most patients in whom ultrasound does not provide sufficient information. Computed tomography (CT) is not as expensive as MRI, but it involves ionizing radiation and is far inferior for depicting female visceral anatomy and pathology. Clinical applications of MRI include the staging of malignancy, detection and characterization of pelvic masses, and evaluation of women with infertility and pelvic pain *(Mitchell, 1992)*.

Aim of the work :

The aim of this work is to evaluate the role and value of MRI in pre-operative staging of cervical carcinoma.