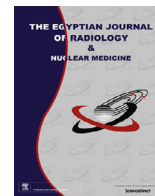




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Original Article

Loco-regional staging of cervical carcinoma: Is there a place for Multidetector CT?

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ABSTRACT

Objectives: Computer tomography (CT) is the most widely used diagnostic modality in the routine evaluation of distant metastatic disease. We aimed to evaluate the role of Multidetector CT (MDCT) in local staging of cervical malignancies.

Patients and methods: In this prospective study 26 patients with pathologically proven cervical malignancies performed postcontrast MDCT of the abdomen and pelvis for local staging. Reconstruction of images was performed in the workstation. In a sample of 12 patients an extended study in which delayed images were obtained for more accurate ureteric evaluation. Data were analyzed using SPSS and McNemar test was used to calculate accuracy.

Results: The overall accuracy of CT was 61.5% excluding the discrepancy in staging between CT and examination under anesthesia (EUA) due to distant metastases (three cases had distant metastases in CT which was not evaluated in EUA). This value was raised to 77% if vagina was assessed clinically rather than by CT.

Conclusion: In cervical cancer; CT gave better results in staging of advanced cases than in early staged ones. Local staging was improved by acquisition of delayed scans.

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1. Introduction

Cervical cancer is the third most common cancer among women after breast and colorectal. There is also a greater incidence in developing countries and in low socioeconomic classes [1].

FIGO staging of cervical cancer is entirely clinical and does not rely on surgical-pathological findings. This is mainly to achieve a staging system that is universally available and as cervical cancer is more prevalent in developing countries only clinical methods are universally available. However for the first time the committee encourages the use of imaging techniques [2,3].

In previous literature, many studies gave poor CT results in evaluating cervical carcinoma yet they had lacked the privilege of high quality reconstructed images and relied only on axial ones.

The aim of this work was to study the added benefit of multidetector CT in the local staging of cervical carcinoma (see Figs. 1–3).

2. Patients and methods

2.1. Study population

This study is a prospective analysis approved by the ethics committee of the Scientific Research Review Board of the Radiology Department, National cancer institute, Cairo University. Included patients had given informed consent to use their data in research studies. Radiation safety committee approval was taken by the Biomedical engineering Department – Cairo University.

The study performed during the period from June 2013 to August 2014.

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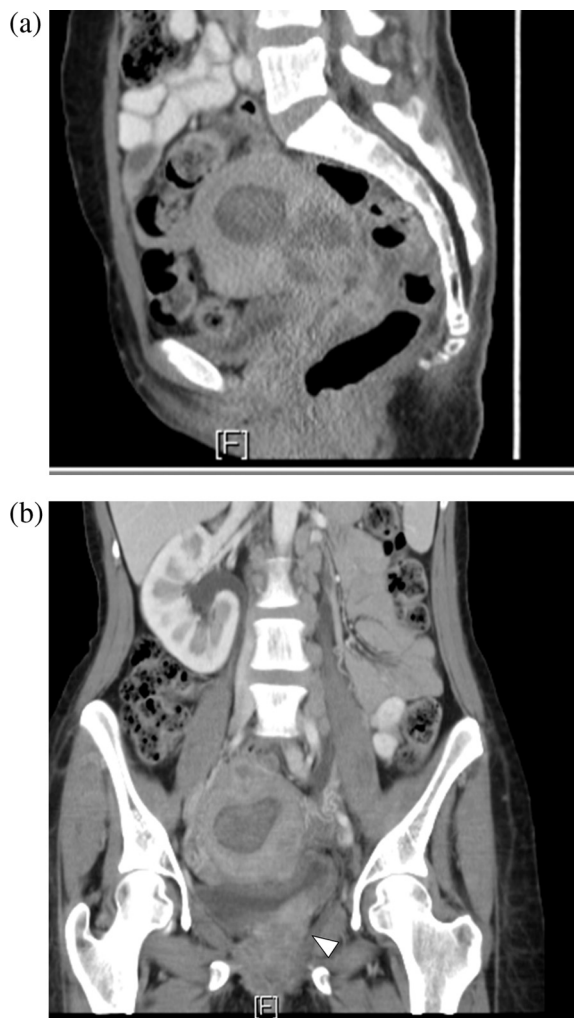


Fig. 1A,B. Case 1: 41 years old patient with history of premenopausal bleeding of 6 month duration. Sagittal (A) and coronal images (B). (A) Heterogenous hypodense cervical mass is seen extending to fundus. (B) Together with infiltration of the bladder from its inferior aspect causing enhancement of bladder wall (arrow).

The study included 26 patients of pathologically proven cancer cervix with their ages ranging from 31 to 88 years. The patient were referred from their departments (Surgery or Radiotherapy) based on their physician request to perform multislice CT for staging.

2.2. Methods

Post contrast CT examination of the abdomen and pelvis was performed using 64-detector scanner (Light Speed VCT sys-ctbay 99, GE Healthcare, USA).

2.2.1. CT technique

Prior scanning, 1000 ml of oral contrast medium was administered 3 h earlier for proper bowel opacification. Image acquisition was performed 70 s after contrast administration. The contrast agent used was “Telebrex”, the dose is 1.1 ml/kg body weight, with a total dose ranging between 60 and 120 ml. In cases with known sensitivity to contrast; “Omnipaque” was the alternative agent, the dose is 50–200 mL (Omni 300); 60–100 mL (Omni 350). The contrast was injected either by the injector. The scan time lasts about 20 s. All the patients were examined in the supine position. In a sample of patients delayed images were obtained (after 7 min)



Fig. 1C,D. Case 1: Coronal images demonstrating, C: left ureteric tapering and dilatation (arrow). D: Left hydronephrosis.

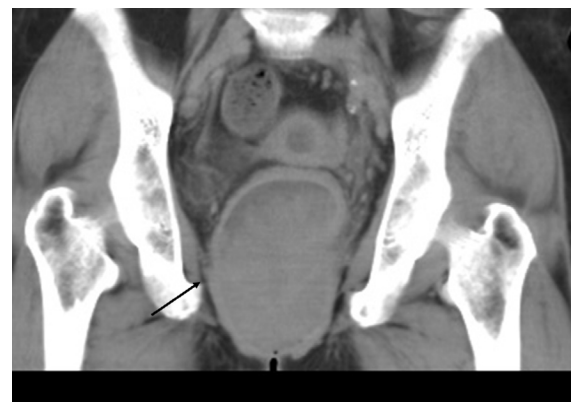


Fig. 2A. Case 2: 58 years old patient with history of postmenopausal bleeding of 1 year duration. Coronal image demonstrating huge cervical mass invading upper and lower vagina (arrow).

for better ureteric visualization of both ureters especially in the coronal view.

2.3. Image reconstruction

Axial images with a slice thickness of 0.6 mm were obtained for each case. Coronal and sagittal MPR (multiplanar reconstruction)

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