INTRODUCTION

The adrenal gland is a common site of disease, and detection of adrenal masses has increased with the expanding use of cross-sectional imaging. Radiology is playing a critical role in not only the detection of adrenal abnormalities but in characterizing them as benign or malignant ***(Mayo-Smith et al., 2001)***.

Normal adrenal glands can be visualized on thin section C.T. and M.R. images of the upper abdomen in the majority of children of all age groups ***(Kenney et al., 1998).***

Adrenal lesions in children may manifest as an abdominal mass or as various endocrine and paraneoplastic syndromes.

The role of diagnostic imaging in the former cases is to differentiate between renal and adrenal masses; in the latter case, the role of diagnostic imaging is to lateralized the source of endocrinophathy to one or both adrenal glands ***(Westra et al., 1994).***

Since adrenal glands are relatively small retroperitoneal organs, they generally can not be assessed by means of physical examination, and imaging studies are required for tumour staging and determination of surgical respectability. During the past decade, cross sectional imaging techniques, such as ultrasonogrphy (US), computed tomography (CT), and magnetic resonance (MR) imaging, have replaced intravenous urography and other more invasive radiographic techniques for evaluation of adrenal abnormalities in children ***(Francis et al., 1992).***

Initial diagnosis of an adrenal mass in a child is made with US ***(Westra et al., 1994).***

Computed tomography and magnetic resonance imaging are the main imaging tools used in the evaluation and detection of anatomic abnormalities of the adrenal gland ***(Francis et al., 1992).***

A large variety of benign and malignant masses of adrenal glands occur in children. MR imaging is an effective technique for evaluating these lesions ***(Bilal et al., 1997).***

Although the spatial resolution of MR imaging is still somewhat inferior to that of CT, it allows tissue characterization and better evaluation of tumour extension owing to its multiplanar imaging capability. MR imaging is used for evaluation of tumour extension when surgery is to be performed imaging findings such as size, shape, and signal intensity are often not specific for a pathologic condition and must be interpreted in conjunction with the patient's age, the clinical history (e.g., trauma), results of physical examination (e.g., palpable mass or presence of an endocrine syndrome), and hormone levels in blood and urine ***(Westra et al., 1994).***

This essay provides a review of the various adrenal disorders encountered in children and the characteristic imaging findings, with emphasis on the relative role of US, CT, and MR imaging in different age groups.

AIM OF THE WORK

The aim of this work is to Highlight the role of imaging modalities (US, CT and MRI) in diagnosis and evaluation of different adrenal glands diseases in children showing their different patterns. Illustrative cases are involved.