INTRODUCTION

Computed tomography (CT) is the study of choice for evaluating the medastinal disease in pediatric. CT is usually performed with intravenously administered contrast material, and spiral CT is the preferred technique for evaluating a mediastinal mass. CT demonstrates thymic hyperplasia and thymic cysts and can help differentiate thymoma and thymic Hodgkin lymphoma. It is also useful in staging Hodgkin lymphoma and non-Hodgkin lymphoma. In thyroid malignancy, CT can depict mediastinal extension and lymphadcnopathy; it also allows detection of goiter and ectopic parathyroid glands. Germ cell tumors such as teratoma and seminoma have characteristic appearances at CT. CT can also demonstrate miscellaneous mediastinal masses, such as lymphangioma, hematoma, those due to fibrosing mediastinitis, and pericardial cysts. Adenopathy due to tuberculosis or sarcoidosis is evident at CT, as is osteomyelitis due to a postsurgical abscess. Finally, CT features can suggest the pathologic origin of metastasis in the mediastinum ***(Ahn et al., 1998)***.

One of the most common clinical indications for CT in the chest is evaluation of a known or suspected mediastinal mass. Although conventional radiography may allow detection of or suggest the presence of a mediastinal mass, in most cases it is of limited use in determining the exact nature and extent of a lesion. CT and, more recently, magnetic resonance imaging enable accurate depiction of masses in the anterior mediastinum as well as precise demonstration of the relationship of such masses to adjacent vital structures. The CT appearance of the mass often provides enough information to allow a specific diagnosis to be made. To maximize the information obtained from a CT scan of the mediastinum, careful attention must be paid to the scanning technique ***(Resado-de-cimstenson et al., 1994)***.

CT evaluation of the mediastinum is performed with standard dynamic CT or spiral (helical) CT.

In standard dynamic CT, intravenous contrast material is injected at a rate of 2-3 mi/sec and a series of eight to 12 scans is obtained every minute (depending on the capabilities of the CT scanner). One of the challenges of dynamic CT is to optimize the bolus of contrast material (through the phase of maximum vascular opacification) without creating significant streak artifacts. Spiral CT solves this problem by acquiring data in a volume set. The entire chest can be scanned in 24-32 seconds or less when specific protocols arc used. Spiral CT is also a single breath-hold examination, thereby avoiding problems with motion-related artifacts as well as uneven interscan motion resulting in loss of data. Volume data sets generated by spiral CT can also be used for multiplanar and three-dimensional imaging) ***(Spizamy et al., 2000)***.

Generating a differential diagnosis for a mediastinal mass starts with a classification scheme. The system used by Felson divides the mediastinum into anterior, middle, and posterior compartments

For anterior mediastinal masses, the classic differential diagnosis is the "4 Ts": thymoma, thyroid, teratoma, and terrible lymphoma. Further clues can be obtained from the radiographic appearance, the patient's age, and associated clinical manifestations.

Turning to the middle mediastinum, the differential diagnosis includes bronchogenic cyst), lymph node abnormalities (sarcoid, lymphoma, metastases), and vascular lesions. Bronchogenic cyst most often occurs between the carina and the esophagus, but the right lower paratracheal region is not an uncom1u1 on alternative location Among lymph node diseases, tuberculous lymphadenitis has become, a more important entity because it is common in patients with acquired

immunodeficiency syndrome and frequently involves middle mediastinal lymph nodes. Metastatic disease usually affects lymph nodes in the anterior and/or middle mediastinum. Lung cancer is the most common primary neoplasm to involve mediastinal lymph nodes. Most extrathoracic neoplasms do not commonly metastasize to intrathoracic ***(Rebner, 2001)***.

Posterior mediastinal masses generally represent neurogenic tumors (neurofibroma, schwannoma, ganglioneuroma, and so on) Posterior mediastinal masses may grow to incredible sizes.

The ability of CT to identify different tissues by their attenuation characteristics can be very important in diagnosing mediastinal masses. the masses that may be fat attenuation, fluid attenuation, or calcified on CT. An anterior mediastinal mass containing fat, water, calcium, and/or teeth is a teratoma Thymoma may have a rim of calcification whereas thymic cyst is a water attenuation lesion. In the middle mediastinum, bronchogenic cyst is often a water attenuation lesion, although uniform higher attenuation in a bronchogenic cyst is a well-known phenomenon Low attenuation lymph nodes with enhancing rims are typical of tuberculous lymphadenitis. As for posterior mediastinal masses, many neurogenic tumors are relatively low in attenuation but not of water attenuation. Calcification may be seen in neurogenic tumors, particularly those containing elements of neuroblastoma. Lateral meningoceles are water attenuation paravertebral masses ***(Moelle et al., 2003)***.

AIM OF WORK

This study is aim to highlight the role of CT and its different application in diagnosis of mediastinal masses in pediatric.