INTRODUCTION

Congenital diaphragmatic hernia results when the pleuroperitoneal canal fails to close completely prior to ten weeks of gestation, a time during which the intestine normally returns to the fetal abdomen. Consequently, abdominal viscera herniate into the fetal thorax, and exert a thoracic mass effect that prevents normal lung development, (Chinn et al, 1983).

The incidence of Bochdalek hernia is about 1:2,200 births. 35% of all affected neonates are still birth, and 95% of these have other major congenital anomalies. 20% die within one hour of birth and seldom was the diagnosis made before postmortem examination. Other major congenital anomalies are rare in those surviving more than one hour, (O'Callaghan et al, 1982).

Morgagni, in 1760 first described the finding of substernal herniation of abdominal contents into the thoracic cavity.

Since this time, this entity frequently has been known as hernia of Morgagni. Recently the most appropriate descriptive name, subcostosternal diaphragmatic hernia is used. This type of internal hernia is relatively uncommon. It

is rarely symptomatic, unlike its posterior counterpart, Bochdalek's hernia.

Increased intra-abdominal pressure caused by obesity and mild or sever trauma are factors which may precipitate internal herniation through this part of the diaphragm, (Thomas, 1972).

Eventration of the diaphragm, although a relatively rare clinical entity, should be considered in all patients with respiratory distress during the neonatal period, particularly in babies born after difficult delivary by breech presentation or forceps extraction. It may be congenital or acquired. Congenital eventration may be partial or complete whereas, the acquired form is usually complete. The congenital type is the result of the incomplete or absent muscularization of the pleuroperitoneal membrane. Early return of the mid gut to the abdominal cavity may be a factor in the failure of normal development of the diaphragm. Acquired type is a result of phrenic nerve involvement by many processes as mitotic, inflammatory diseases or trauma during delivery or operation, (Symbas et al, 1977).

Traumatic diaphragmatic hernia is an uncommon but

important problem in the patients with multiple injuries. In about 95% of cases, diaphragmatic hernia follows blunt trauma, (Brown and Richardson, 1985). Traumatic diaphragmatic hernias are produced by a sudden increase of the pleuro-peritoneal pressure gradient. The explosive force tears the diaphragm usually on the left side as the right side is protected by the liver. About 90% of strangulated diaphragmatic hernia are traumatic in origin, and about 85% of these occur within three years of injury, (Pomerantz et al, 1968).

Hiatal hernias are divided into two main types. Each type involves a different anatomic defect and has different clinical significance. Type I axial or sliding hiatal hernia is common and is not significant unless it is accompanied by pathologic degrees of reflux. The abnormality is a slight dilatation in the diameter of the hiatal opening and strertching or attenuation of the phreno-esophageal membrane, which permits a portion of the gastric cardia to slide upward into the hiatus. The second major type of hiatal hernia, the paraesophageal rolling or type II hernia is less common but is a significant clinical problem. In this type of hernia, there is a defect in the phreno-esophageal membrane usually on the left ventral aspect of the hiatus, but also occasionally to the right and posteriorly. These defects allow

protrusion of the peritoneum through the fascia in the manner of a true hernial sac.

When there is a herniation of the cardia well above the diaphragm in addition to a paraesophageal hernia sac, this type may be classified as a type III or combined hiatal hernia, (Skinner, 1990).

Infants with Bochdalek hernia requiring operation within 24 hours of birth with immediate operation in order to reduce the abdominal contents back into the peritoneal cavity preceeded by adequate preoperative resuscitation and postoperative intensive care, with closure of the defect with two layers of interrupted silk sutures in such a fashion as to imbricate the opposing edges, (Boles et al, 1971).

The treatment of hernia of Morgagni is excision of the sac, closure of the neck, and closure of the defect in the diaphragm by anchoring the anterior rim to the posterior aspect of the sternum and costal cartilages with nonabsorpable sutrues, (Thomas, 1972).

The surgical repair of eventration consists of transthoracic plication of the redundant diaphragm so as to

lower the diaphragm to a position of midexpiration, (Symbas et al, 1977).

The treatment of traumatic diaphragmatic hernia is surgical repair, and it should be performed shortly after the diagnosis. The abdominal approach is preferred in left sided lesions as it allows for adequate exposure with repair of the defect and associated intra-abdominal injuries, thoracotomy is preferred in right sided lesions, (Brown and Richardson, 1985).

When definite indications for surgical treatment of sliding hiatal hernia are present, a technique employed which emphasizes over correction of the hernia and creation of an intra-abdominal segment of esophagus to strengthen the valvular function of the cardia. The main goal of procedures for sliding hiatal hernia is the reduction of the hernia and restoration of the normal anatomical relationship between the cardia and diaphragm, (Skinner and Belsey, 1967).

The approach for paraesophageal hernia may be either transthoracic or transabdominal. Following the incision, procedure of choise is reduction of the herniated part of the stomach, and excision of the sac. After that, the

diaphragmatic opening is closed with interrupted heavy non absorpable sutures, (Hill and Tobias, 1968).

Aim of the work:

The aim of this work is to review the pathology, diagnosis and treatment of different types of diaphragmatic hernia.