Mediastinal Teratoma in an Infant
Report of a Case
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INTRODUCTION

The development of diagnostic aids and advances in thoracic surgery in recent years have stimulated early discovery and treatment of mediastinal teratomas. Even though teratomas are among the most common types of tumors found in the anterior mediastinum, they are rarely discovered in children below the age of two years. Adler, Taheri and Weintraub,1 in a recent review of the literature, found only 26 reported cases in infants, and in the same article added another one to the literature. We would like to report the successful removal of an anterior mediastinal teratoma in a 14-month-old infant girl.

CASE REPORT

Z.A., a 14-month-old Negro girl, was admitted to Jefferson Medical College Hospital on November 10, 1960. The mother sought medical aid for her child because the child's heart beats were more prominent on the right side than on the left side of the chest. This was first noticed by her brother four months prior to admission. At age nine months, she was treated for pneumonia with penicillin at another hospital. There is no record of a chest x-ray examination at that time. Since this episode of pneumonia, the patient gained weight slowly, and appeared to develop more slowly than her siblings.

Physical examination on admission revealed a thin, poorly-nourished, and underdeveloped infant girl with normal vital signs. Significant positive findings were limited to the thorax. There was dullness to percussion and decreased breath sounds over the left side of the chest, whereas the percussion note and breath sounds were normal over the right side of the chest. Heart sounds were best heard over the right anterior thorax.

Laboratory findings, which included a complete blood count, urinalysis, and blood chemistry, were all within normal limits. Roentgenograms of the chest (Fig. 1A and B) revealed a
large area of opacity in the left hemithorax. Some aerated lung could be seen in the periphery. Because of the patient's past history of pneumonia, the possibility of a loculated empyema was considered. Thoracentesis performed on November 11, 1960 yielded only a few milliliters of fluid which was bacteriologically sterile and contained no malignant cells. Another thoracentesis was performed four days later and yielded 175 milliliters of thick gelatinous yellow-gray fluid. A small amount of air was injected into the chest to facilitate roentgenographic visualization. Again this fluid was bacteriologically sterile and no malignant cells were seen. Laminograms of the anterior mediastinum following this procedure showed the outline of the mass without diminution in size. A diagnosis of teratoma of the mediastinum was made, based on the roentgenograms and the presence of the mucoid material aspirated.

On November 25, 1960 left anterior thoracotomy was performed, and a large teratoma was removed from the anterior mediastinum together with the thymus gland. The gross specimen (Fig. 2) was oval and measured 10 x 8 x 4 cm. Attached to the superior portion of the mass was the thymus gland. This mass weighed 270 grams. Cross section revealed a multiloculated cystic structure. Some of these cystic spaces were filled with serous fluid. However, the majority of the spaces were filled with a rather firm yellowish-gray cheesy material. Small foci within the tumor mass appeared translucent and grossly compatible with cartilage. The histologic diagnosis was cystic teratoma.

The patient's postoperative course was uneventful. Roentgenographic study of her chest (Fig. 3) made on the first postoperative day showed complete expansion of the left lung. She was discharged in excellent condition on her 11th postoperative day. The patient was asymptomatic and well 29 months after operation.

**Comment**

Schlumberger postulated that teratomas of the anterior mediastinum have their origin in the faulty embryogenesis of the thymus gland. The case presented here illustrates the close proximity of the tumor to the thymus gland. Inada and Nakano have a series of 15 cases, all in adults, 11
of which show residual thymic tissue. Teratomas show derivatives from all of the three fundamental germinal layers. Teratomas are usually benign and rarely become malignant. Fuller, Martin and Bagley reported a case in which a teratoma showed malignant change.

Teratomas are usually asymptomatic; however, as Bradford, Mahon and Grown reported, they can produce symptoms. These authors divide these symptoms into four classes: first, pressure symptoms as they enlarge; second, toxic symptoms when they become infected; third, symptoms due to erosion into a blood vessel, bronchus or pleural space; fourth, symptoms due to malignant change. Wilcox and Wollstein reported a case of a six-month-old infant who died of respiratory embarrassment due to pressure from a large anterior mediastinal teratoma. Major diagnostic aids include: roentgenkymography, laminationography, fluoroscopy, angiocardiology and aortography.

Anterior mediastinal tumors should be excised. The operative mortality is low in patients who have uncomplicated teratomas. These tumors can be approached through a sternum-splitting incision or through an anterior thoracotomy.

REFERENCES


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TRACHEOBRONCHIAL COMPRESSION DUE TO VASCULAR SLING

The diagnosis of an anomalous left pulmonary artery should be considered in cases of severe respiratory distress, lower tracheal or bronchial compression, and pulmonary overdistention. While it is not possible to reach a firm diagnosis in all cases, the authors' opinion that certain roentgenologic signs warrant strong suspicion of this diagnosis and the surgeon should anticipate this possibility and be prepared to deal with it. Surgical treatment was successful in three of the four patients presented. The authors believe that these are the third, fourth and fifth patients reported to have survived complete surgical correction of the anomaly.


ISONIAZID INTOXICATIONS

Only in severe cases is heroic treatment necessary. Emergency measures applied in most cases of accidental ingestions and poisonings are also employed in isoniazid poisoning. These measures include induced vomiting, gastric lavage, intravenous fluid, and, if the patient is convulsing, an effective anticonvulsant drug is indicated. It is wise not to use isoniazid for patients who are known to be epileptic or to suffer from convulsive seizures. Prior to administering isoniazid, a careful history should be obtained, particularly in children, as to whether they suffer from recurrent convulsions or had convulsions during infancy. To prevent convulsions and/or peripheral neuritis, it is recommended that when isoniazid is prescribed, pyridoxine be administered simultaneously. If isoniazid is prescribed for the home use of anyone in a household, the family should be warned about the potential hazard of this drug and be told that this medication must be securely kept out of the reach of children.