Primary Hydatid Disease of the Mediastinum

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A primary Echinococcus of the upper mediastinum revealed itself as a cervical mass in an 18-year-old asymptomatic patient. Chest x-ray films and a thyroid scan led to the diagnosis of benign mediastinal tumor or cyst. Through a cervical approach a cystectomy was performed. The pericystic membrane was left “in situ”. The result of this simple operation was excellent. This, according to our view of literature, is the 22nd case of this condition published.

INTRODUCTION

This is probably the least frequent of all primary localizations of hydatid cysts (HC). Statistics of surgically treated hydatid disease (HD) give percentages up to 2 percent for this condition and this percentage includes primary and secondary cysts. In the series of one of the authors, the present case is the only one among 1,434 patients, that is to say, 0.06 percent (Table 1). There is a definite difference between primary and secondary HD of the mediastinum. The secondary HD arises as an extension of costal, vertebral or pulmonary HD and thus is much more frequent and, from the practical point of view, just a complication of the primary disease. Conversely, primary HD of the mediastinum must be considered as a rare condition involving peculiar therapeutic problems.

CASE REPORT

An 18-year-old girl was seen at the outpatient department with a mass at the base of the anterior aspect of the neck. This mass had grown slowly during the last nine months, but had produced no symptoms. One year and a half previously she experienced an episode of malaise, asthenia and nonproductive cough which lasted a month and disappeared without any treatment.

The girl did not seem acutely or chronically ill. There was a slight cyanosis of the cheeks; the peripheral pulse was rhythmic and of normal frequency; blood pressure was 115 systolic, 55 diastolic.

There was a round mass 4 cm in diameter, protruding above the sternal manubrium slightly to the left of the midline. This mass did not move with the swallowing movements. It was of firm consistency, nontender, nonadherent to the skin but not movable in any direction; its surface was smooth and it was sharply delimited except for its inferior pole, which seemed to be covered by the sternum. There were no palpable lymph nodes. The rest of the physical examination disclosed no abnormalities. The results of routine blood and urinalyses were within normal limits.

A posteroanterior (PA) chest film disclosed a slight symmetrical widening of the upper mediastinum. Contrast films of the upper esophagus revealed no displacements (Fig 1).

Thus we faced the diagnostic problem of a tumor of the anterior cervical regions with no signs of malignancy and with an intrathoracic prolongation without major symptoms of compression. We thought of the following conditions: nodular goiter, upper mediastinal tumor, or HC.

Basal metabolic rate (BMR) was plus 23 percent, iodemia (iodides in blood), 15.8 gm/100 ml, cholesterol (cholesterol) 185 mg/100 ml. Thyroidal 131I uptake-curve was within limits of normal function. A thyroid scan revealed a normal-sized gland with homogeneous 131I uptake and the lower pole of its left lobe apparently amputated (Fig 2). As we suspected a displacement of the thyroid toward the right and slightly upward by the growing palpable mass, radioscan was performed (Fig 3) which

![Figure 1](http://journal.publications.chestnet.org/pdaccess.ashx?url=/data/journals/chest/21471/ on 05/25/2017)
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intratracheal intubation anesthesia. After severing the pre-thyroidal muscles, the upper pole of a cystic tumor was detected. Two-hundred fifty ml of a clear liquid were obtained by puncture; then the cyst was opened and the membrane of a pure (noninfected) HC was found. The cyst extended about 10 cm in depth, and was in contact with the sternum, trachea, pericardium and aortic arch. The empty parasitic membrane was removed and the interior surface of the pericystic membrane washed with ether. A Redon aspiration drain was left in the residual cavity, the pericystic membrane was flexible and collapsed spontaneously.

The postoperative recovery was uneventful. The patient was ambulant and on full diet from the morning of the second postoperative day and was discharged on the sixth postoperative day. Cyanosis of the cheeks had disappeared by this time.

DISCUSSION

There are a few monographs and collective reviews of this condition1,5 which appeared in the last two decades. Although clinical and surgical data of 28 cases of primary HD of the mediastinum have been published,1,4,9-14 it seems to us that the real number is not greater than 21, according to the current concept that HD of the mediastinum should be considered as being secondary if there exists or the patient has been previously operated upon for a pulmonary, vertebral or costal HC.8,11,15 According to this, cases 1, 2, and 3 of Rakower and Mildiwsky,5 cases 7 and 8 of Guedi6 and the cases of Varah,6 and Gasco et al12 were secondary HC.

Clinical and radiologic aspects of mediastinal HD are very well dealt with in various papers.1,5,10,14 Generally, HC of the mediastinum are neither clinically nor radiologically distinguishable from mediastinal tumors. In some cases, they protrude toward the neck, revealing themselves as an anterior or lateral mass. Although hydatid endemic and the biologic test of Casoni and Weinberg are of diagnostic value, the diagnosis is almost always a suspicion which is confirmed during surgery. Complications are frequent and may be severe. They include compression of mediastinal elements, perforation of vessels and bronchi, infection and dissemination of ruptured cyst. Therefore, patients should be operated upon without delay.

Almost any type of thoracotomy and mediastinotomy has been employed in the approach, depending on the site of the cyst; also cervical approaches have been performed for "mediastinocervical" cysts.4,7 The ideal operation is the extirpation of the parasite with its pericystic membrane (cystopericystectomy). But, as the latter usually adheres intimately to such important structures as mediastinal nerves and vessels serious complications may ensue from its dissection.5,14 In cases where this risk appears to be important, simple extirpation of
the cyst after sterilizing its interior with 1 per 1,000 formalin or 10 percent saline solution is indicated. The residual cavity may be drained with a Redon type of aspiration drain.

In our case, a primary mediastinal hydatid cyst revealed itself as an anterior lower cervical mass causing no symptoms. A slight cyanosis of both cheeks disappeared immediately after the cyst was removed, so we consider this cyanosis as caused by a minimal degree of venous compression. There was an episode of dry cough and malaise experienced many months before, but we surely can not consider this as directly related to the presence of the parasite as these symptoms passed and the cyst, logically, continued growing. The spontaneous disappearance of symptoms of compression could be explained by a fissuration of the cyst which caused it to lose some of its liquid content, decreasing its volume; this is a frequent event in the natural history of the Echinococcus. But in such a case, cysts are to be found "flabby" at operation and not taut as this one was.

The carrier came from a region endemic for both hydatid disease and goiter. For this reason and because of the central location of the mass and the radiologic signs of intrathoracic growing, the differential diagnosis between a retrosternal goiter and a benign tumor or HC of the upper anterior mediastinum was to be made. A thyroid scan allowed us to eliminate the first of these hypotheses.

The operation was carried out through a lower anterior cervical approach, which could have been extended with a medial sternotomy if the case had required this. The "purity" of the cyst and the elasticity of its pericystic membrane inclined us to renounce the total exeresis (cystopericystectomy). No supplementary benefit was to be expected from this operation, since the membrane was seen to collapse by itself and was not, therefore, a cause of compression. A cystopericystectomy would have required difficult dissection from the trachea, pericardium and aorta and, perhaps, a supplementary incision exposed to various complications: a medial sternotomy. All this would have converted an extremely simple operation into a more hemorrhagic and traumatic one, entailing serious risks. The postoperative period was surprisingly free of any discomfort, which fact has to be attributed to the type of operation performed.

The experience gained with this case encourages us to recommend a cervical incision for the treatment of anterior mediastinocervical HC of deep intrathoracic situation. Since it is not necessary to perform a cystopericystectomy, this approach gives a sufficient degree of scope for treating the cyst by puncture, aspiration, injection of a sterilizing solution and extirpation of the parasitic membrane, cleaning and draining the residual, self-collapsing pericystic cavity.

It is difficult to have a sure preoperative diagnosis of HD of this localization, but it is enough to suspect that a mediastinocervical tumor may be an HC for beginning the operation with a cervicotomy; if the mass is found to be unresectable by this approach, we shall perform a complementary medial sternotomy, thus using the T-shaped incision which many surgeons use for the extirpation of thymomas.

REFERENCES

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