Hydatid Cyst of the Lung*,**

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Hydatid disease is not as rare in our part of the world as suggested by the paucity of published reports. The tendency of the disease to remain quiescent over long periods and lack of availability of proper diagnostic facilities on a large scale contributed to the lack of knowledge of incidence of the disease in this area.

Surveys to investigate the incidence of hydatid disease in man and animals were carried out at the Medical College, Amritsar. During the five year period 1950-55, incidence of hydatid disease was .009 per cent of 42,948 admissions in the Medical College Hospital, Amritsar. Eight and four-tenths per cent of the 460 dogs revealed Taenia Echinococcus granulosus in their intestines. Three and one-half per cent of 1,095 goats and sheep examined in the local slaughter house harboured hydatid cysts.'

These, along with some of the other published reports,2*7 indicate the endemic nature of the disease in India.

During the last five years, ten cases of pulmonary hydatid cysts were treated in our unit.

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<th>TABLE 1—AGE AND SEX INCIDENCE</th>
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<td>Male</td>
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Seven out of 10 patients were between 20-40. The youngest in this series was nine years old and oldest was 56.

Symptomatology

Hydatid cysts of the lung are known to remain silent for a long period without causing any or only minimal symptoms. The symptoms arise either as a result of pressure of the growing cyst on the surrounding structures or most commonly because of the complications which befall the cyst.

Cough with expectoration was the commonest symptom and was present in all. This was the first symptom in six. The character of the sputum varied from mucoid to frankly purulent. This was accompanied by bouts of fever in five. In one, the onset was acute with high fever.

Haemoptysis, the next common symptom, was noted in seven and was the presenting symptom in three. Most often the haemoptyses were small and recurrent, but in one, the illness started with a bout of profuse haemoptysis. Because of the cough with expectoration, accompanied by fever and haemoptysis, two cases were treated as tuberculous for some time in outside clinics. It seems important to keep in mind hydatid dis-

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ease as one of the causes producing such symptoms, especially in areas where the disease is endemic. Four patients complained of pain in the chest and it was the presenting symptom in two. In one, the pain was localized to the area overlying the cyst and in this case the cyst was infected and adherent to the parietes. In others, the pain was mild, inconstant and vague in nature and in these there were no adhesions or infection.

One of the patients formerly had attacks of paroxysmal dyspnoea and urticaria as manifestations of anaphylactic phenomenon.

**Diagnosis**

Many pulmonary hydatid cysts are diagnosed on a routine skiagram of the chest and many symptomless cases are likely to be encountered if x-ray film surveys are done in endemic areas. The diagnosis is not always definite on radiological evidence alone and frequently it may only indicate the presence of a radio-opaque mass with a suspicion that it may be a hydatid cyst.

Simple pulmonary hydatid cyst revealed itself by an ovoid or round shadow clearly demarced from the normal lung (Figure 1). It may be difficult to come to a definite diagnosis. In one of the patients such an appearance suggested the diagnosis of hydatid cyst, but on exploratory thoracotomy, it was found to be a neuro fibrosarcoma arising from the chest wall (Figures 2 and 3).

Complicated cysts produce characteristic radiological appearances depending upon the extent of separation of cyst wall from the pericyst (Figure 4), establishment of communications with the bronchi, degree of

**FIGURE 1:** Uncomplicated hydatid cyst in a woman aged 28 years.
changes such as atelectasis, infection and bronchiectasis in the adjacent lung parenchyma and calcification of the cyst.

Differentiation of hydatid cysts of the lung from hepatic cysts bulging through the diaphragm may present a problem. Lateral skiagram of the chest and skiagram taken after pneumoperitoneum help to elucidate this point, but at times it may be difficult to do so without resorting to exploratory thoracotomy as was necessary in one of our patients (Figure 5).

Casoni intradermal test was positive in 70 per cent of the cases in which it was done. It was not much relied upon due to the false positives which were noted during this period.

Complement fixation test was done in two cases and it was positive.

Eosinophils were not significantly increased in our cases. Eosinophilia is not of much diagnostic importance specially in areas where other helminthic infestations are common.

Treatment

Treatment of pulmonary hydatid disease is surgical indeed. Expectant treatment or any other medical treatment suggested so far in the literature cannot be relied upon. Such methods must often fail and may leave the patient suffering from pulmonary suppuration in addition to the danger due to anaphylaxis, sudden asphyxia and development of secondary daughter cysts. The aim should be that a pulmonary hydatid cyst must be treated surgically without undue waiting, because a cure can almost always be achieved. Various surgical procedures are available and depending upon the pathological manifestations, presence of infection, secondary changes in the lungs, certainty of diagnosis and the general condition of the patient, most suitable method for an individual patient, can be selected. The different procedures carried out in this small series of patients are shown in Table 2.
A technique suggested by Barrett for the treatment of simple hydatid cysts was successfully applied in two patients. This is a useful procedure as there is no loss of functioning pulmonary tissue and there is less post-operative morbidity as compared to the other methods. The space occupied by the cyst is obliterated by the expansion of the compressed pulmonary tissue in a period varying from a few days to a few months depending upon the amount of fibrous tissue in the pericyst. The often raised objection of accidental rupture of the cyst during expulsion and soiling of the wound with live hydatid material can be successfully met with most often, provided the anaesthetist and the surgeon perform the procedure correctly and the whole area is packed properly before undertaking the procedure. Removal of the pericyst was not attempted in these patients and does not often seem to be necessary.

Pulmonary Resections

Segmental, lobectomy or pneumonectomy have to be undertaken in some patients. Indications for following such a procedure vary according to the choice and experience of the surgeon in various procedures and
the pathological manifestations encountered. Irreversible changes such as bronchiectasis or suppuration in the surrounding lung demand necessarily such a procedure, rather than simple removal of the cyst. Right lower lobectomy was done in two patients. In one there was associated bronchiectasis and in the second the cyst was infected and deeply situated in the substance of the lobe. Two patients were treated by pneumonectomy because of suspicion of malignancy as resection should always be preferred over enucleation of a tumour of doubtful nature. A definite diagnosis could not be made prior to section of the removed lung. It is felt that in such a situation which can often arise, if possible, lobectomy should first be done, specimen examined and pneumonectomy be done if the lesion so demands. Such a procedure, if followed, helps in preserving normal pulmonary tissue. But in both of our patients lobectomy was not technically possible without interfering with the diseased area because of the marked interlobar adhesions and extensive inflammatory changes in the surrounding lung parenchyma. Marked haemorrhage or suppuration of the cavity left after removal of the parasite is stated to require pulmonary resection (Susman) but such a problem was not encountered in any of these cases.

Drainage of the Cyst

Three infected cysts were treated successfully by this procedure. In two open thoracotomy was done but during the operation condition of the patients deteriorated so the chest was closed and drainage of the cysts was done a few days later, after the adhesions had formed with the parietes.

The third patient, a nine year-old child who had bilateral infected hydatid cysts, was in poor general condition due to prolonged cough, expectoration and fever, not fit for any other surgical procedure, was treated by a two stage drainage operation on the left side under general endotracheal anaesthesia. During the second stage procedure a lot of hydatid material and pus was aspirated through the endotracheal tube when it supposedly was being expelled out of the side of operative intervention, but to our surprise, postoperative skiagram revealed disappear-
rancel of the hydatid cyst from the contralateral side also and in a few days the lung completely expanded (Figures 6 and 7). Two stage drainage operation, though considered obsolete because of uncertainty of adhesion formation, prolonged post-operative morbidity due to prolonged drainage and availability of better procedures, may still be required in a desperate patient unsuitable for any other procedure.

**Hydatid Empyema**

It should be drained at the first instance, followed by removal of the hydatid cyst from the pleura and the lung, but if there are irreversible changes in the lung, such a condition should better be treated by pleuro-pneumonectomy. One such case is included in this report where drainage of the empyema and removal of some of the cysts from the pleura was done but there was extensive involvement of the pleura and the lung. Pleuro-pneumonectomy could not be done because of poor general condition of the patient. Sinus is still persisting.

**SUMMARY**

This report, based on ten cases of hydatid cysts of the lungs, shows that cough and expectoration with or without fever were most often accompanied by small, recurrent haemoptysis. Anaphylactic manifestations were present in one patient.

Pulmonary resection was performed in four cases, enucleation of the cyst in two and drainage in four cases.

Two-stage drainage operation, considered obsolete, may still be required in desperately ill patients unsuitable for any other procedure as in one of these cases.

**RESUMEN**

Esta comunicación que se basa en 10 casos de quistes hidatídicos pulmonares, muestra que la tos y la expectoración con o sin fiebre fue acompañada lo más a menudo de hemoptisis pequeñas, recurrentes.

Las manifestaciones anafilácticas se encontraron en un enfermo. Se hizo resección pulmonar en cuatro, enucleación del quiste en dos y canalización en cuatro.

La operación de canalización en dos tiempos, considerada anticuada, puede aún requerirse en los enfermos muy gravemente afectados que no son adecuados para otro procedimiento, como ocurrió en uno de estos casos.

**RESUMÉ**

Cette publication, basée sur 10 cas de kystes hydatiques des poumons, montre que la toux et l’expectoration avec ou sans fièvre sont le plus souvent accompagnées de petites hémoptysies récidivantes. Des manifestations anaphylactiques existaient chez un malade.

Une résection pulmonaire fut pratiquée chez chaque malade, l’énucléation du kyste chez deux d’entre eux, et un drainage dans quatre cas.

Une intervention de drainage en deux temps, considérée comme surannée, peut encore être nécessaire chez des malades dont l’état semble désespéré, et qui ne sont pas justiciables d’un autre procédé, comme ce fut le cas pour l’une des observations rapportées.

**ZUSAMMENFASSUNG**


In 4 Fällen wurde eine Lungenresektion vorgenommen, bei 2 Fällen eine Enukleation der Cyste und viermal eine Drainage.

Die zweizeitige Drainageoperation, die nicht mehr gebräuchlich ist, kann noch erforderlich werden für besonders schwere Fälle, für die jede andere Maßnahme, wie sie für die vorausgegangenen Fälle beschrieben worden sind, nicht mehr in Frage kommen.
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