

A Review of 27 cases of Pulmonary Hydatid Cyst Disease treated surgically at King Hussein Medical Center

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Objectives

To review surgical cases of pulmonary hydatid cyst disease treated at the King Hussein Medical Center over a period of three years from January 2007 and December 2009.

Methods

This retrospective study was performed at the Thoracic Surgery division of the Royal Medical Services. Twenty seven cases were included in this study who underwent surgery. Mode of presentation, diagnosis, surgical approach and complications were analyzed.

Results

There were 15 male (55.6%) and 12 females (44.4%) patients. Age ranged from 15-72 years (mean 44±10.3 years). Cough and hemoptysis were the most common presenting symptoms found in 20 cases (74.1%). Right sided cysts were

found in 9 cases (33.3%) while left sided cyst were found in 13 cases (48.1%) and in 5 cases (18.5%) cysts were bilateral. We performed enucleation and capitonnage in 4 patients (14.8%), wedge resection in 5 patients (18.5%) and deroofting and capitonnage in 18 patients (66.6%). Most patients had a smooth recovery except 3 patients (11.1%) who developed a prolonged air leak, two of whom were treated conservatively.

Conclusion

Different surgical techniques including deroofting and capitonnage and wedge resection were effective to treat pulmonary hydatid cyst disease with minimal complications and satisfactory results. (Rawal Med J 2012;37:319-321).

Key words

Hydatid , Cappitonnage , Air leak .

INTRODUCTION

Hydatidosis has been known since the time of Hippocrates, the responsible parasite is known as *Ecchinococcus*, and might afflict any organ in the body primarily the liver followed by the lung in 20 % of cases. Hydatid cyst disease is still a health problem in many countries around the world. It is endemic in Mediterranean countries, New Zealand, Africa and South America. Globally, the annual loss due to human hydatidosis (treatment and lost income) has been estimated at ?US \$200 million.¹ Patients harboring Hydatid cysts in their lungs as intermediate hosts might present clinically in different pictures according to the cyst size, location and whether it is intact or ruptured. Patient might present with chest pain, cough, dyspnea or hemoptysis. But in certain situations of rupture or allergy might be life threatening.² Although medical treatment is available, many

medical references list surgery as the treatment of choice. About 73-75% of patients respond to medical management to some degree, but the cure rates are only 25-30%.² There still is a lot of controversy regarding the type of operative procedure, to do cappitonnage or not and how to achieve a sufficient airostat. In our study, we used the database of the Thoracic Surgery division in King Hussein Medical Center to revisit and analyze those cases that had been treated surgically for pulmonary hydatosis over a three years period.

PATIENTS AND METHODS

We performed a retrospective review of the hospital records of adult patients who underwent thoracotomy for hydatid cyst excision between January 2007 and December 2009 at King Hussein Medical Center, Amman, Jordan. Twenty seven cases were included in this study, non-surgical cases

were excluded. Mode of presentation, diagnosis, surgical approach and complications were noted and analyzed. All surgeries were performed under double lumen general anesthesia in our hospital which is the tertiary referral hospital of peripheral military hospitals.

To remove the cysts, our surgical approach was by means of a posterolateral incision, and in cases where the cysts were less than 10 cm in diameter, we attempted to remove them first by enucleation. In the records we reviewed, patients with bilateral cysts only had to undergo exploration for one side because the cysts on the other side had either already ruptured or were small and treated conservatively.

With regards to the surgical techniques used, the chest cavity around the cyst was isolated using 10% hypertonic saline. When enucleation was performed the entire cyst was removed without rupturing it; in cases of deroofting a controlled rupture of the cyst is done by suctioning its content followed by sterilization of the cavity using hypertonic saline. Both procedures were followed by obliteration of the residual cavity using a technique of capping. In all cases, we made certain that airtightness was achieved (closure of all bronchial openings in the cavity using leak test).

RESULTS

There were 15 male (55.6%) and 12 female (44.4%) patients. The mean age was 44 ± 10.3 year; the majority (59%) was within the 21-40 years age group (Table 1).

Table 1. Age distribution of patients.

Age	Number	%
15-20	2	7.4
21-40	16	59.2
41-60	7	25.9
61-80	2	7.4

Cough and hemoptysis were the most common presenting symptoms (Table 2). Right sided cysts were found in 9 cases (33.3%) while left sided cyst were found in 13 cases (48.1%) and in 5 cases (18.5%) cysts were found bilaterally.

Table 2. Common presenting features.

Presenting Symptoms	Number	%
Cough	20	74.1
Hemoptysis	20	74.1
Chest Pain	16	59.2
Dyspnea	13	48.1
Asymptomatic	5	18.5

We performed enucleation and capitonnage in 4 patients (14.8%), wedge resection in 5 patients (18.5%), and deroofting and capitonnage in 18 patients (66.6%). None of our patients required a more radical surgery such as a lobectomy or pneumonectomy. Thoracoscopy was not used in the management of these cases.

Most patients had a smooth recovery except for 3 patients (11.1%) who developed a prolonged air leak (more than 7 days), two of those were treated conservatively by continuous negative pressure suction, the third patient had to be operated again and the air leak was successfully controlled. Fortunately, there were no mortalities. Only one patient (3%) had a recurrence after 6 months, and had to undergo another surgery.

DISCUSSION

Hydatid cyst disease is easily diagnosed in endemic areas by means of a plain chest radiograph and chest CT-scan. Serology is supportive of the diagnosis,⁵ however, bronchoscopy is a poor diagnostic tool, as it was diagnostic in only one of 312 patients.⁸ In our practice, most of the patients are referred from our colleague pulmonologist with a diagnosis.

Hydatid disease is seen in both sexes and all age groups, although it is more common in those aged 20-40 years.⁷ We found that 59.2% of our patients were in the 21-40 years age group. Pulmonary Hydatid cysts are often asymptomatic and oftentimes are a coincidental finding. In symptomatic cases the clinical presentation depends on whether there is an intracystic or intrapleural rupture.

Symptoms vary between studies; in our review we found that cough (74.1%), hemoptysis (74.1%) and chest pain (59.2%) were the most common

presentations, asymptomatic patients accounted for 18.5% of the cases (Table 2). A study from Morocco by fund that chest pain was the most common presentation (91%) and only 2.5% were asymptomatic.³

At our center, we consider surgery as the treatment of choice for hydatid cyst disease, as such we reserve medical treatment for those patients who are not fit for general anesthesia, or for small and multiple pulmonary cysts or multi-organ hydatosis. Some debate still arises about asymptomatic calcified cysts, but in our division we keep them under follow up and observation. As of yet, we do not take thoracoscopy into consideration in the management of hydatid cyst disease;¹⁰ since there is risk of uncontrolled rupture of the cyst and spillage into pleural cavity beside the problem of air leak.

There is no optimal surgical procedure for hydatid cyst; each center modifies the procedure according to their experience and needs. The main objective in such surgeries is to preserve as much of the lung tissue as possible. The best approach is to remove the cyst at once by enucleation if possible, but that is very difficult to perform on cysts that are more than 10 cm in diameter. Some centers recommend performing capping to obliterate the potential residual cavity but others have found that it offered no extra advantage.

In our division, we succeeded in removing four cysts by enucleation and capping (14.8%), and we performed wedge resection in 5 patients (18.5%) where the cysts were peripheral and small. Deroofing and capping was done in 18 patients (66.6%). None of our patients required a more radical surgery such as a lobectomy or pneumonectomy. The majority of our patients had a smooth recovery.

After 6 months of follow up of our patients who were surgically treated and were on postoperative Albendazole we found a single recurrence (3%) on the same side of surgery that mandated surgical re-excision and the patient did well after that.

Postoperative complication rate of 12.9% and 19% have been reported according to cysts' size.⁶

CONCLUSION

Different surgical techniques including deroofing and capping and wedge resection are effective methods in the treatment of pulmonary hydatid cyst disease with minimal complications and satisfactory results.

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Rec. Date: Apr 23, 2012 Accept Date: May 11, 2012

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