International Surgery Journal
Nandu VV et al. Int Surg J. 2016 Aug;3(3):1570-1573
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20162749

Research Article

Hydatid disease of lung

Vipul V. Nandu*, Amit N. Pothare, Amol V. Deshpande

Department of Surgery, Shri V.N. Govt. medical college, Yavatmal, Maharashtra, India

Received: 31 May 2016
Accepted: 02 July 2016

***Correspondence:**
Dr. Vipul V. Nandu,
E-mail: dr.vipulnandu@gmail.com

ABSTRACT

Background: Hydatid cyst is zoonosis caused due to Echinococcus species - Cestode parasite, Echinococcus granulosus. In developing countries like India, Iran, China and Mediterranean countries it is still remains a major problem. It can involve any organ and can mimic almost any pathological condition. Complication associated rather than disease itself, are difficult to treat. Objectives of the study was to study the clinical presentation of hydatid disease of lung, its management and its complications.
Methods: All patients diagnosed as hydatid disease mainly by X-ray, USG or CT scan and then treated either operatively or non-operatively were included in this study. Pulmonary function test and pre-operative incentive spirometry started. Patients were operated after a preoperative Albendazole therapy for 28 days in dose of 10mg/kg and postoperatively all patients were put on Albendazole three course of 28 weeks each with 1 week gap in between. The choice of surgical procedure was guided by site, size of the cyst and associated complications. Thorough post-operative care and chest physiotherapy and nebulization started. The patients were followed up for a period of 6 months.
Results: Total 26 patients were studied in a period of 3 years. Maximum number of patients presented with cough (83.34%). X-ray was most commonly used diagnostic modality, and CT scan was done in all patients for confirmation of diagnosis. The mostly right side was involved in all patients. Most of the lung cysts were single and unilateral. Total cystectomy with intercostal drainage was the most common modality of treatment. Broncho-pleural fistula with pus discharge was the most common intra-operative complication. All the patients had respiratory complications in postoperative period which are managed conservatively.
Conclusions: Lung Hydatid is a severe systemic manifestation of Hydatid disease. Complications are life threatening. Management of lung hydatid disease requires both surgical and intensive respiratory management. With recent advances in management, outcome has improved over years.

Keywords: Hydatid disease, Echinococcus granulosus, Lung hydatid

INTRODUCTION

Hydatid cyst is zoonosis caused due to Echinococcus species - Cestode parasite commonly known as small tape worms of carnivorous animals. There are predominantly two species affecting the human population; Echinococcus granulosus and Echinococcus multilocularis. It was first described by Hippocrates as "Liver full of water".[1]

With evolving science, advanced diagnostic and treatment facilities and above all better living conditions in developed countries, the disease now being limited only to agriculture and ranch work associated people of Australia, Latin America, Eastern Europe and New Zeland.[2] But in developing countries like India, Iran, China and Mediterranean countries it is still remains a major problem. In India the most affected areas are Central India, Andhra Pradesh and Tamil Nadu.[3] It can involve any organ and can mimic almost any pathological

condition. Complication associated rather than disease itself, are difficult to treat.[2] Although hydatid cysts can be treated by various modalities, like surgery, chemotherapy, and or percutaneous aspiration, but surgery by far remains the gold standard for treatment among day by day evolving new procedures. It is the only treatment which is applicable over the entire spectrum of disease.

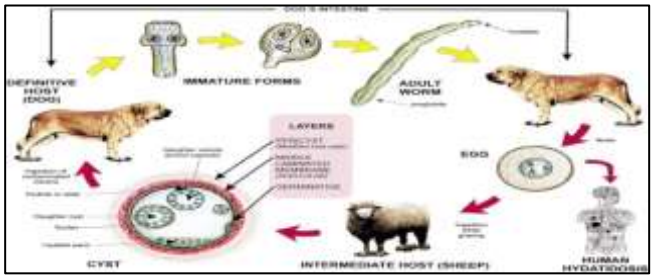

Figure 1: life cycle of echinicoccus granulosus.

METHODS

Prospective clinical study conducted from July 2011 - December 2013. All patients diagnosed as hydatid disease mainly by X-ray, ultrasound or CT scan and then treated either operatively or non-operatively were included in this study. All the diagnosed cases were subjected to detailed history and physical examination with all the base line investigations. X-ray chest PA view remains the main diagnostic modality and ultrasonography/CT scan done only for those cases which are difficult to assess on X-ray. Pulmonary function test and pre-operative incentive spirometry started. Patients were operated after a preoperative Albendazole therapy for 28 days in dose of 10mg/kg and postoperatively all patients were put on Albendazole three course of 28 weeks each with 1 week gap in between. The choice of surgical procedure was guided by site, size of the cyst and associated complications. The patients who are unfit for any surgical procedure are started on Albendazole therapy for 6 months, 28 days cycle with 1 week gap in between, in dose of 10mg/kg. Thorough post-operative care and chest physiotherapy and nebulization started. The patients were followed up for a period of 6 months. Two times a month for three months, and then monthly.

RESULTS

Total 26 patients were included in the study. Hydatid surgeries constitute 2.08% of total major surgeries. The highest incidence was found in 3rd decade (27.59%). The disease was found to be, more common in females (70.69%). Hydatid disease is more commonly seen in agriculture related population.

Table 1: Clinical features.

Clinical presentations	Present study	Sharifi Mood et al[4] 49 patients	Ghoshal AG et al[5] 106 patients
Cough	83.34%	73.80%	73.58%
Dyspnea	83.34%	32.60%	8.49%
Hemoptysis	33.34%	65.30%	15.09%
Chest pain	33.34%	36.70%	54.72%

Table 2: Investigations for thoracic hydatid.

Diagnostic modality	Sensitivity	Present study	Sharifi Mood et al[4]
X Ray	66.67%	66.67%	69%
Computed tomography	100%	100%	92%

Table 3: Side and lobe of lung involved.

Side of lung	Lobe involved	Present study (%)	Sharifi Mood et al[4] 49 patients	Ghoshal AG et al[5] 106 patients
Right	Lower	66.67%	27.4%	30.18%
	Middle	16.66%	23.5%	7.54%
	Upper	16.67%	13.7%	11.32%
Left	Lower	0%	15.6%	23.58%
	Upper	0%	19.6%	8.49%
Bilateral		0%	8%	18.86%

Table 4: Operative modality.

Operative modality	Present study (%)
Total cystectomy	83.34%
Segmental excision	0%
Lobectomy	0%
Pneumonectomy	16.66%

Table 5: Intraoperative complications.

Intra-operative complication	Present study (%)	Ghoshal AG et al[5]
Spillage and Anaphylaxis	16.64%	2.10%
Broncho-pleural fistula	16.64%	1.05%

Table 6: Postoperative complications.

Post-operative complications	Present study(%)
Wound infection	16.64%
Respiratory complications	100%
Recurrence	0%

Maximum number of patients with lung hydatid presented with cough (83.34%). One presented with cough with expectoration. No one presented with expectoration of cyst wall. The second most common symptom was dyspnea (83.34%). Hemoptysis and chest pain occurred in about 33.34% of patients.

All the patients were initially seen by pulmonary medicine department and then referred to our side.

Figure 2: Intra-operative photo of lung hydatid.

X-ray was most commonly used diagnostic modality, and USG/CT scan was done in all patients for confirmation of diagnosis. The X-ray was the initial diagnostic modality of choice which usually shows, homogenous round or oval well shaped masses with smooth borders, surrounded by normal lung tissue.

Figure 3: Broncho-pleural fistula.

But in cases of infection or rupture, diagnosis may become atypical and in such situations CT becomes diagnostic modality of choice.

DISCUSSION

The most common side of lung involved was right side in all patients. On right side lower lobe involvement was seen in maximum of patients (66.67%), followed by middle lobe in one patient (16.66%) and upper lobe involvement in one patient (16.67%). These findings are comparable to various previous studies, which shows high incidence of lung hydatid on right side. Sharifi et al; Ghoshal et al; and Faheem N et al reported similar incidence.[4-6]

All the lung cysts were single and unilateral. There was only one complicated lung cyst with prominent bronchopleural fistula formation and presented with frank hemoptysis.

Five patients presented with simple uncomplicated cysts, were operated by total cystectomy with intercostal drainage.

All the patients operated by open thoracotomy. Total cystectomy with intercostal drainage was done in simple lung cyst (83.34%).

One patient with brochopleural fistula and pus discharge was managed by thoracotomy with pneumonectomy and intercostal drainage (16.66%). Radical surgery was chosen, because the patient had

- Extensive irreversible damage to the occupied lung lobe.
- Presence of bronchiectasis.
- Presence of brochopleural fistula.

Previous studies conducted by Akther et al; Sharifi et al; Ghoshal AG et al; Faheem N et al also advocates similar lung preserving surgical interventions.[4-7] Radical surgeries like pneumonectomy are done only in cases of complications like empyema, bronchopleural fistula and severe infection.

During intra-operative period one patient had bronchopleural fistula with pus discharge and one had spillage and anaphylaxis (16.64% each). Fistula was managed by pneumonectomy and intercostal drainage, while spillage and anaphylaxis by through wash of pleural cavity by scolicidal solution and resuscitation followed by cystectomy and drainage. This was higher as compared to previous study of Ghoshal AG et al.[5] This might be, because of very small number of patients of lung hydatid in the present study

All the patients, in postoperative period had respiratory complications including cough, chest pain, dyspnoea, difficulty in breathing which are managed conservatively by chest physiotherapy and nebulization. This might be due to, open thoracotomy procedure.

One patient had wound infection (16.64%), managed by regular dressing.

CONCLUSION

Hydatid disease is still a major problem in rural agricultural population. Surgery is most widely acclaimed procedure for treatment of hydatid and vary from site, size and organ involved. Good living condition and sanitation with mass education is the most effective for prevention of hydatid disease.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Pissiotis CA, Wander JV, Cenden RE. Surgical treatment of hydatid disease. Prevention of complications and recurrence. Arch Surgery. 1972;104:454-59.
2. Amir Jahed AK, Fardin R, Farzad A, Bakshandeh K. Clinical Echinococcosis. Annals of Surgery. 1975;182(5):541-6.
3. Torres RR and Campbell JR. An interpretative review of the surgical treatment of hydatid disease. Surgery Gynaecology and Obstetrics 1965;121:851-61
4. Sharifi-Mood A, Fazaeli A, Izadi Sh, Mokhtari S. Fifteen years' experience with pulmonary hydatidosis in Zahedan, Iran. Iranian J Parasitol. 2007;2(7):7-11.
5. Ghoshal AG, Sarkar S, Saha K, Sarkar U, Kundu S, Chatterjee S et al. Hydatid lung disease: An analysis of five years cumulative data from Kolkata. J Ass Phy Ind. 2012;60:12-6.
6. Faheem N, Nusrath N, Shyam sundar rao B, Raja Ram G, Sushma C, Subramanyam Y, Ramesh K. The scenario of hydatid cyst disease in epidemic areas of Andhra Pradesh- evaluation and analysis. Int J Res Health. 2013;1(3):120-8.
7. Akther J, Khanam N, Rao S. Clinico epidemiological profile of hydatid diseases in Central India, A retrospective and prospective study. Int J Biol Med Res. 2011;2(3):603-6.

Cite this article as: Nandu VV, Pothare AN, Deshpande AV. Hydatid disease of lung. Int Surg J 2016;3:1570-3.