HYDATIDOSIS:EXPERIENCE WITH SURGICALMANAGEMENT OF CONCOMITANT LIVER ANDLUNG DISEASE

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ABSTRACT

Objectives: To describe our experience with surgical approach to management of concomitant hydatid cyst disease of liver and lung.

Methods: This descriptive study was conducted in Department of Surgery, Khyber Teaching Hospital, Peshawar from July, 2015 to June, 2017. 50 patients from both genders and all ages, admitted to surgical department or referred from medical wards were recruited in the study. Patients were categorized with respect to age, sex, symptoms, hemithorax and lobar localizations, state, number and size of cysts, preoperative complications, surgical approaches and techniques, postoperative hospitalization and postoperative morbidity and mortality. All the patients underwent surgical interventions. Results from collected data were analyzed using SPSS 23. All the results were expressed in percentages.

Results: The mean age of the patients was 45 years. 30 (70%) of 50 patients were male and 20 patients (30%) were female. The most common presenting symptoms of the patients in both groups were cough, chest pain and sputum production, pain epigastrium and pain hypochondrium. Frequently seen pulmonary radiological pathologies were the homogenous density air–fluid level and solitary pulmonary nodule. Radiological signs of hepatic pathology were encap- sulated lesions or hypoechoic lesions in the right and less frequently in the left lobe. Pulmonary cysts most commonly involved the right lung; hepatic cysts also more commonly involved right lobe of the liver. Most common preoperative complication was that of pleural thickening and development of empyema. Lung saving surgical procedures (70%) were used more than radical surgery (30%) for treatment of pulmonary hydatid disease. The most common complication post-operatively was pneumonia (5%). Surgical patients had a 6% post-operative mortality.

Conclusion: Hydatid cyst disease of the liver is frequently accompanied by pulmonary hydatidosis. Single setting surgical treatment for both liver and lung hydatidosis is associated with better post-operative outcome in terms of morbidity and mortality.

Key Words: Hydatid cyst disease; Hepatic cysts; Pulmonary cysts; Hydatidosis

INTRODUCTION

Hydatid cyst disease is a common problem seen among patients presenting to tertiary care hospitals. It can involve any organ of the body, but most common affliction is seen in the lungs and liver[1]. Concomitant pulmonary and hepatic hydatidosis can occur in 4%–25% of patients[2,3]. Medically, the disease is treated orally with mebendazole and albendazole especially in children[4]. However, due to the risk of hepatitis from use of mebendazole or albendazole, surgery is the preferred treatment modality in adults[5]. In this study, we have evaluated patients with concomitant lung and liver hydatid cyst disease and have described our experience with them. We have also discussed the principles of treatment of hydatid disease.

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METHODS

This descriptive study was conducted in Department of Surgery, Khyber Teaching Hospital, Peshawar from June, 2015 to June, 2017. Patients referred from medical units were also recruited in the study. Patients were recruited in the study after explaining the purpose of study to them and filling in an informed consent form. Approval was taken from the Hospital Ethical Committee prior to recruitment of patients in the study. Male and female patients from all age groups with concomitant pulmonary and hepatic hydatidosis were included in the study. Patients with isolated hepatic or pulmonary involvement or those who were started on medical treatment for hydatid disease were excluded. They were evaluated with respect to age, sex, symptoms at presentation, laboratory findings, hemithorax and lobar localizations, and state, number and size of cysts, preoperative complications, surgical approaches and techniques, postoperative hospitalization and postoperative morbidity and mortality. All the patients underwent surgical interventions. Data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 23. Results were expressed in percentages.

RESULTS

Age and sex

The mean age of the patients was 45 years. 30 (70%) of 50 patients were male and 20 patients (30%) were female.

Symptoms

Most of the patients suffered from at least one or more symptoms at the time of diagnosis. The most common presenting symptoms of the patients in both groups were productive cough, chest pain, pain in the epigastrium and right hypochondrium pain.

Radiological examination

Most oftentimes observed aspiratory radiological pathology was the homogenous thickness air–liquid level or lone pneumonic knob (Figure 01). The water lily

sign, cavitary injury and aspiratory breakdown were more uncommon in the chest X-beams of the patients, while height of the stomach, pneumonic penetration, conclusion of the costodiaphragmatic sinus and pleural thickening were more normal. Radiological signs in-dicative of liver association were epitomized injuries or hypoechoic sores morally justified and less much of the time in the left flap.

Stomach ultrasound assessment of patients uncovered a sum of 87 pimples, of which 66% were situated morally justified and 34% in the left liver projection. Extra pimples were likewise distinguished in the spleen of two patients.

Localization

Of 50 patients, 30 patients (60%) had pneumonic blisters morally justified, 6 (12%) in the left and 14 patients (28%) had pimples in the reciprocal hemithorax. Right lower projection was the most widely recognized spot for the pimples while the likelihood of the sore to be situated in the correct center flap and the lingula was lower. Similarly, 32 patients had blisters in the correct hepatic and 18 had them in left hepatic flap.

Size of cysts

The mean diameter of the pulmonary cysts as measured by ultrasound scans was 5.2 x 3.4 cm^2. Mean diameter of hepatic cysts measured by same modality was calculated to be 5.4 x 3.6 cm^2. Hepatic cysts less than 2 cm in diameter were observed in two patients (4%), 2–5 cm in 64%, and 6–9 cm in 32% of the patients.

Preoperative complications

Complications were present at the time of presentation in 18 (36%) of 50 patients. These complications and percentages in groups are shown in Table 01 below:

Operation types

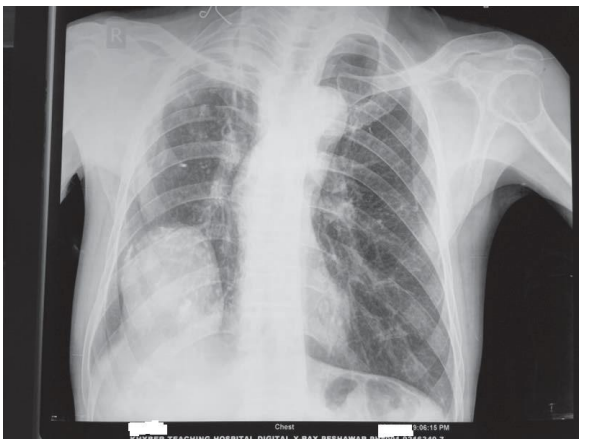

Figure 1: Solitary Pulmonary Nodule in a patient with Pulmonary Hydatidosis

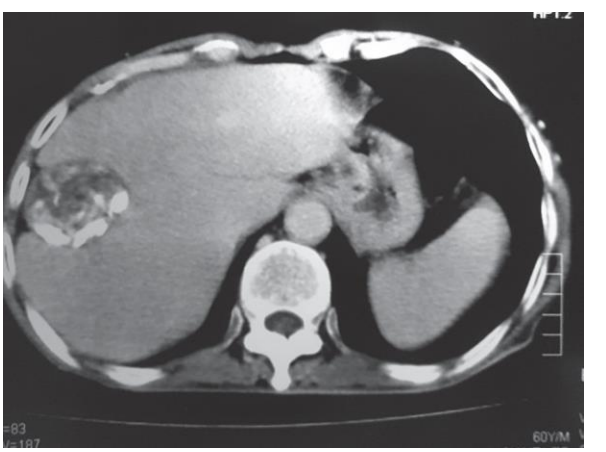

Figure 2: CT scan abdomen showing hydatid cyst in right lobe of the liver

Lung saving surgical procedures (70%) were used more than radical surgery (30%). The most preferred intervention was cystotomy with capitonnage. Decorti-cation was performed in patients who had severe pleural thickening.

Postoperative complications and mortality

The most common complications in each group included pneumonia (10%) and non-expanded lung (8%).. The mean hospital stay of patients was 6±2 days. Three patients died postoperatively, making the mortality 6% (Table 02).

DISCUSSION

Hydatid infection is a typical and possibly genuine condition found in patients of the two sexual orientations and having a place with all age gatherings. It is known to humankind since the time of Hippocrates 6. It is a parasitic infesta-tion brought about by the hatchlings of helminth, Echinococcus granulosus. The infection is endemic in zones where sheep and steers are raised, including the Middle East, Central Asia, South America, New Zealand and East

Table 1: Complications At Presentation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Empyema	5	10.0	10.0	10.0
hepatobronchial fistula		1	2.0	2.0	12.0
hepatopleural fistula		2	4.0	4.0	16.0
Nil		32	64.0	64.0	80.0
pleural thickening		6	12.0	12.0	92.0
Pneumothorax		4	8.0	8.0	100.0
Total		50	100.0	100.0	

Table 2: Post-Op Complications And Mortality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Atelectasis	3	6.0	6.0	6.0
Death		3	6.0	6.0	12.0
nil		35	70.0	70.0	82.0
non-expanded lungs		4	8.0	8.0	90.0
pneumonia		5	10.0	10.0	100.0
Total		50	100.0	100.0	

Africa 7. Liver being the commonest site of contribution is tainted in 50-70% of the cases in grown-ups. Hydatidosis is for the most part endemic in country locales with poor clean conditions and deficient veterinarian control. Lungs being the second most normal site of penetration are influenced in 20-30% of the cases 8.

Hydatid illness can happen at the same time at more than one site, yet most regular blend is that of liver and lung hydatidosis. Associative liver and lung hydatid growths are called hepatopulmonary hydatid pimples, and have been accounted for in 8.8-36.5% patients in various studies9-13.

Separated pneumonic hydatid sores are more common in kids and youths than grown-ups 14. Single aspiratory pimples happen in grown-ups of the two sexual orientations, however they are more regular in guys (53–70%) in the second

furthermore, third many years 10,15,16. Comparable discoveries were seen in our patients. In any case, the presence of hepatopul- monary sores particularly in female grown-ups more noteworthy than 40 years old was significant.

Hepatic blisters ordinarily stay asymptomatic for quite a while. At the point when they amplify, they lead to manifestations eg. stomach torment from stretch on the hepatic container, an unmistakable mass in the correct hypochondrium or epigas-trium relying upon site of contribution inside the liver, and entanglements, for example, obstructive jaundice from in-trahepatic and/or extrahepatic biliary obstacle, liver ulcer and intra-stomach crack 17. Unruptured and uninfected pneumonic pimples are typically asymptomatic in 8-32% of the patients; a few patients may grumble of infrequent dry hack or chest pain18. On the off chance that pimples burst into a contiguous bronchus, it is showed by energetic hacking and expectoration of pungent sputum involving mucous, and liquid and covered film from inside the hydatid blister, bronchospasm and serious dys- pnea, which may prompt suffocation and passing because of block. Intrapleural crack happens in 5% of cases and may deliver an intense clinical picture: extreme chest torment, constant hack, serious dyspnea and cyanosis, stun, or suffocation. Indications, for example, summed up urticaria, exceptional pruritis, serious anaphylactic stun and passing happen habitually 18.

Gastrointestinal manifestations, for example, stomach torment, biloptysis, sickness, regurgitating, loss of hunger and weariness are generally extremely uncommon. Thusly, all patients with hydatid illness of the lungs should be evaluated for corresponding hepatic contribution.

Aspiratory growths may set up themselves in any of the lung flaps, yet they are all the more habitually found in lower projections and principally in the privilege hemithorax9,10,14,16,19,20. Hepatic blisters likewise incline toward right flap (73%) of liver 9. Our investigation thought of comparable outcomes. Aspiratory pimples were plentiful in the correct lung (66%) and the lower flaps (41% in right and 16% in left) and the hepatic sores in the correct projection in 75% of the patients.

In our investigation, analytic instruments for pneumonic hy-datid sickness were chest radiography and registered tomography (CT) check chest, while for hepatic hydatid sores, stomach ultrasonography and CT examine were the modalities (Figure 02). CT filter is likewise the favored methodology to identify convoluted sores and separate among various sorts of sores just as precisely confine them 21, 22. CT sweep can likewise assist with arranging the careful methodology for the board of various sorts of cysts[20].

Pleural entanglements were found in 36% of the patients in our examination. Pneumonic pimples that are found incidentally and sub-pleurally can cause pres-sure corruption. This can likewise prompt opening of the blisters into the pleural cavity. The most well-known aspiratory complexities noted in our arrangement were empyema (4.1%) and pneumothorax (6.1%). Growths situated in the liver arch may crack into the pleural cavity causing hep-atothoracic confusions. These were exhibited in 10.2% of the patients in the current examination.
Attendant hepatic and aspiratory pimples in grown-ups are dealt with precisely instead of clinical ly23,24,25,26. Blisters are dealt with precisely with clearing and evacuation of the endocyst, shirking of contami-country, and the board of the lingering hole, 23,24,25. Conservation of maximal ordinary tissue is significant. Numerous surgeries have been portrayed in the writing for careful expulsion of lung sores 23,24,25. These incorporate moderate resections, for example, cystotomy with or without capitonnage, or, infrequently, revolutionary resec-tions, for example, segmentectomy or lobectomy. Sort of medical procedure settled on relies upon intra-usable discoveries.

Cystotomy and capitonnage of the remaining hole are the surgeries of decision in our set up. A few specialists may suggest leaving the cavity open, yet we like to annihilate the hole due to the danger of contamination and boil arrangement brought about by the leftover hole.

Transthoracic approach which consolidates right thoracotomy and phrenotomy is suggested for treatment of hepatic pimples situated over the liver arch. Annihilation of the leftover pit without inclusion of a channel causes great outcomes. Outside waste causes a drawn out seepage in non-festered pimples. Additionally, new biliary openings are framed after outside waste. Decay is a significant factor in deciding the treatment convention 25,26. For decayed liver blisters, we want to embed a solitary elastic channel underneath the dia-phragm into the depression before reversal of the hole.

For patients with two-sided pneumonic hydatid infection, a middle sternotomy approach can be ap-utilized, however as Çetin and partners 27 announced, middle sternotomy isn't suggested in patients with pleural difficulties and in patients with associative liver pimples in view of the danger of mediastinitis and create ment of hepatobiliary fistula 23,27. Accordingly, none of our patients with accompanying liver pimples went through middle sternotomy.Albeit percutaneous needle desire is con-venient in liver pimples, 27 it is totally contraindicated in pneumonic blisters 23,24.

Needle goal of lung growths may cause inconveniences, for example, pneumothorax, anaphylactic responses, and the advancement of new sores. Patients are likewise inclined to resulting superin-fections 23,24.Postoperative complexities, for example, drawn out air spill, empyema, pneumonia and atelectasis have been accounted for in 1.4–19.1% and mortality in 0–2% in diverse arrangement 9,10,11,16. No critical contrasts have been noted between the intricacies following radi- cal and lung saving medical procedures in the writing 10,16,20. In corresponding to that, we met postoperative difficulties in 18% of the patients with hepato-pneumonic hydatidosis.

In this manner, careful mediation should be the essential treatment for hydatid illness of the liver and lungs happening together. Liver pimples found subphrenically should be dealt with at the same time with the lung hydatid sickness. In patients with existing together liver blisters, phrenoto-my is more helpful and should be applied to forestall a subsequent activity.

CONCLUSION

It should be made a standard practice to sus-pect concomitant hydatid disease of lungs in patients presenting with hepatic hydatid disease with or without pulmonary symptoms. Furthermore single setting sur-gery for both liver and lung hydatid cyst disease reveals better results and reduced post-operative mortality and morbidity.

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