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CASE STUDY

RARE PRESENTATION OF HYDATID CYST INVOLVING BOTH KIDNEY AND RETROPERITONIUM

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ABSTRACT

Hydatid cysts are due to parasitic infection caused by cestode tape worm Echinococcus. Hydatid cyst most commonly involves the liver and lung. Involvement of kidney and retroperitoneum without involvement of other major organ are much less common. We reported a recent case of hydatid cyst involving both kidney and retroperitoneum. This case was diagnosed by radiological study followed by serology and lastly by laparotomy. The case was treated by surgical removal of the cysts combined with chemotherapy before and after surgery.

INTRODUCTION

Hydatid cyst is caused in humans by the larval stage of the *Echinococcus granulosus* complex. Human is the accidental intermediate host. Echinococcus can infest any organ in our body either by primary inoculation or by secondary inoculation. Liver is the most commonly involved organ, about 75 % and 15 % occur in lung. The remaining 10-15% cases involve the other organs of the body like kidney, spleen, heart, ovaries, scrotum, testis, muscle, thyroid gland, inguinal canal etc .Involvement in the retroperitoneum are rare. Kidney involvement in echinococcosis is also less amount with only 2–3 percent of all patients (Mongha *et al.,* 2009). Few cases are reported where the kidney and retroperitoneum are involved simultaneously (Kaya *et al.,* 2006).

Case report

A 50 yrs old Hindu female house wife, admitted with chief complaints of gradually increasing swelling and dull-aching pain over swelling in right hypochondrium and lumber region for last 2 years with occasional fever for same duration. She also had fatigue, nausea, vomiting, anorexia for last 1 year. There was no history suggestive of Diabetes mellitus, Hypertension, Tuberculosis. She had no significant past history of similar type of illness. She was not taking any drugs. Examination revealed mild anemia, without any icterus or lymphadenopathy. Blood pressure was 100/70 mm of Hg, pulse was 86/min, chest was normal, Cardiovascular and nervous system was within normal limits.

On abdominal examination a cystic swelling measuring 14 x 12cm with smooth surface, rounded margin, non tender, non-mobile, with a notch in the middle, not moving with respiration, located in right hypochondrium and lumber region. Liver could not be separately palpable, spleen was not palpable. On head and leg rising test and knee-elbow test revealed that the mass was retroperitoneal. Chest X- ray and ECG revealed no abnormality. Blood investigation revealed, Hb % -11.5 gm/dl, TC – 8000/cmm, N67, L 28, E4 M1, ESR-15, sugar- 84 mg/dl, urea- 23 mg/dl, creatinine- 0.67 mg/dl. Ultrasonography of whole abdomen revealed hepatomegaly, cortical cyst in right kidney with mild hydronehrotic changes. Contrast-enhanced CT scan of whole abdomen revealed a well defined cystic SOL measuring 14 x 9.8 x 8.2 cm having thick wall and internal thinned non-enhancing septation without any calcification in right side of the abdomen arising from retro peritoneum displacing the adjacent liver parenchyma antero-superiorly. Another well-defined thick walled cystic SOL is seen at posterior aspect of right kidney measuring 11.3 x4.4 x10.5 cm, displacing the kidney anteriorly. There is compression over right renal pelvis leading to obstructive changes. These CT scan features are suggestive of Hydatid cyst or lymphangioma. So we have done ELISA for Echinococcus IgG and that was positive, 44.69 U/ml (ref. range, < 8 U/ml:-normal > 12 U/ml:- positive). Surgical consultation was done in this case and laparotomy was planned .After exploring the abdomen, revealed one large cyst within the retroperitoneum and another small cyst in the upper pole of right kidney. The cyst was removed completely. Seven days

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before and after the operation Albendazole was given. Patient remain well in subsequently follow-up both clinically and radio logically.

CECT of abdomen showing thick wall and internal thinned non-enhancing septation arising from retro peritoneum displacing the adjacent liver parenchyma anteriorly and superior.

DISCUSSION

Hydatid disease is endemic in central India and a major health problem in sheep and cattle-rearing countries. Dog, wolf, fox, and jackal are definitive host and sheep, pig, horse, goat and man are intermediate hosts. The egg are discharged with the faeces of definitive hosts and then hatches in the small intestine of the intermediate host and releases an oncosphere that penetrates the intestinal wall and moves through the portal venous system. About 85-95 % larvae are trapped in the liver and lung and only about 15 % of them escape into systemic circulation to invade other organ, mainly the muscle, kidney, bone, brain (Saidi, 1976). Spleen may be involved in about 4 % of the case. Cerebral hydatid cyst occur in only 2 % of all case reported. Cardiac hydatid cyst is very rare (0.02-2%) and most commonly involve the left ventricle in 50-60% of case. Hydatid cyst can also be found rarely in the peritoneum. Retroperitoneal involvement was always thought to be secondary due to rupture or spillage during surgery of liver hydatids. Primary retroperitoneal hydatid cyst without other organ involvement was first reported by Lockhart and Sapinza in 1958 (Lockhatr and Sapinza, 1958). Few cases of simultaneous involvement in the retroperitoneum and kidney are published in different journal in the different parts of world (Kaya *et al.,* 2006). Various mode of spread have been suggested to explain the escape of liver and lung involvement, via lymphatics (Barret, 1960) or via veno-venous shunt within the liver and in the space of retzius (McPHAIL and Arora, 1967). There are no specific local or general symptoms and signs of hydatid disease (Atan, 1997). Hydatid cysts in humans produce symptoms by two mechanisms: a generalized toxic reaction due to the presence of the parasite itself and local or mechanical symptoms depending on the location of the cyst. The majority of infestations are diagnosed following incidental findings at radiographic examination for unrelated complaints. For cystic echinococcosis, imaging is the main method that is relied on for diagnosis while serology tests such as indirect hemogglutination, enzyme linked immunosorbant assay, immunoblots or latex agglutination that use antigens specific for E. granulosus are used to verify the imaging results. Ultrasonography and CT scan are most useful for establishing the diagnosis of hydatid disease. CT scan is more sensitive than ultrasonography. . World Health Organization (WHO) 2001 classification of USG images of cystic Echinococcosis cysts is CL, CE1, CE2, CE3, CE4 and CE5. CL (cystic lesion) is an active unilocular cyst with uniform anechoic content and no clearly visible cystic wall; CE1(Cystic Echinococcosis 1) is an active unilocular simple cyst with uniform anechoic content and cystic wall well visible; CE2 is an active multivesicular, multiseptated cyst with cystic wall well visible; CE3 is an active unilocular cyst with an inner floating detached membrane. CE4 with pseudotumor, solid sonographic pattern and CE5 is cyst with calcified wall (Eckert *et al.,* 2001) Sensitivity of the ELISA test was found to be 98% while the specificity was 70%, the predictive value was 89% (Kagiko *et al.,* 1986). Sequencing of the DNA polymerase chain reaction of contents from the cyst could also be performed as more specific test. In this case echinococcal IgG antibody was positive. The diagnosis and appropriate surgical therapy is usually delayed because most of the hydatid cysts remain asymptomatic until it is getting complicated (Eckert and Deplazes, 2004). In more than 40% of the cases, the complications, among which rupture, secondary infection, compressive syndromes and suppuration are the most common, precede the diagnosis of the disease. Yılmaz *et al*. reported a case of acute uremia and intestinal obstruction due to a retroperitoneal hydatid cyst (Yılmaz *et al.,* 2007). For simple cases of cystic echinococcosis, the most common form of treatment is surgical removal of the cysts combined with chemotherapy using Aldendazole and/or Mebendazole before and after surgery. However, if there are cyst in multiple organs or tissues, or the cyst are in risky locations, chemotherapy and/or PAIR (puncture-aspiration-injection-reaspiration) become alternative options of treatments. There have been a number of studies that suggest that PAIR with chemotherapy is more effective than surgery in terms of disease recurrence, and morbidity and mortality.

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