Peritoneal Hydatid Cyst

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Abstract :

Hydatid disease is a parasitic infection caused by the cestode tapeworm Echinoccocus granulosus. It is endemic in the cattle grazing areas like India, Australia, New-Zealand, Middle East, Africa, South America and Turkey. In humans the disease commonly involves the liver (75%) and the lungs (15%). Rarely (10%) other regions of the body may be involved.

Key words : Hydatid cyst, Liver, Peritoneum, Computed Tomography

Introduction : Hydatid disease is a common parasitic disease caused by the larval stage of Echinococcus granulosus. It presents in varied modes [1]. In humans, majority of cases show involvement of the liver {75%}. Second common location of involvement is lung {15%}. It rarely involves the brain, heart, bone, or other organs[2]. There have been reports of rare areas of hydatid cyst involvement in the body [3]. There have also been reports of disseminated peritoneal hydatid cysts, but they have been attributed to a previous history of blunt trauma or liver surgery for hydatid cyst disease [4]. Primary intraperitoneal hydatid cyst are very rare.

The adult Echinococcus granulosus resides in the small bowel of the definitive hosts (dogs or other carnivores). The eggs are released in the feces. The ingestion of these eggs {through contaminated food or unwashed hands} further leads to their hatching in the small bowel and release of an oncosphere that penetrates the intestinal wall and migrates through the circulatory system into various organs, especially the liver and lungs. In these organs, the oncosphere develops into a cyst that enlarges gradually, producing protoscolices and daughter cysts that fill the cyst interior.

The definitive host becomes infected by ingesting the cyst-containing organs of the infected intermediate host. The hydatid cyst has three layers: outer pericyst, middle ectocyst, and inner germinal layer (the endocyst), where the scolices (larval stage of the parasite) and the laminated membrane are produced. Daughter vesicles that contain the protoscolices, are formed from the germinal layer.

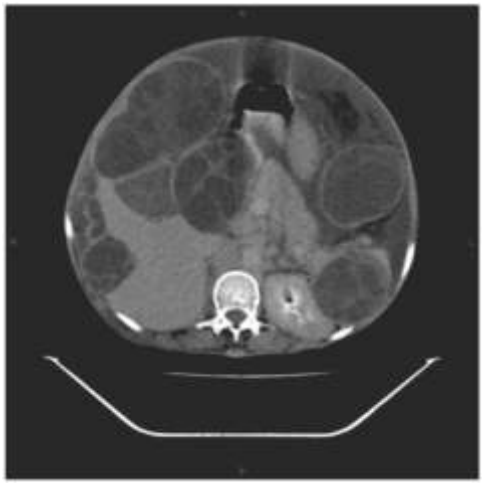
Here we present two cases of intraperitoneal hydatid cysts.

Case report :

Case 1: A 50 years female presented with abdominal distension, slowly increasing over last six months. She gave history of having 3 pet dogs at home. She was sent to ultrasound study which showed multiple cystic areas in the abdomen and liver. CT was advised later. CT scan was obtained with contrast administration. It showed multiple thin walled intraperitoneal cysts. Multiple cysts were seen in the liver as well. A cyst was also noted in the spleen. The cysts showed multiple peripherally lined daughter cysts. No solid component was noted within them. The cysts showed mild enhancement of the walls. Gross ascitis was noted as well. The CT findings gave the impression of intraperitoneal, hepatic and spleeninc hydatid cysts.

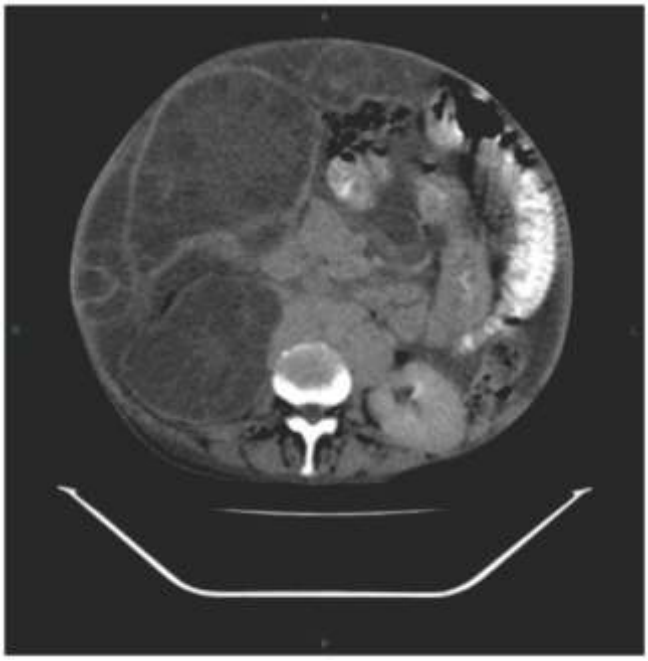
Case 2: A 60 years male came to medicine OPD with distention of abdomen and pain. Ultrasound showed multiple intraperitoneal and hepatic cysts. CT scan was ordered which showed large intraperitoneal thin walled cysts with multiple daughter cysts within it. Cysts were also seen at right subdiaphragmatic area, liver and in the pelvis. The cysts showed mild enhancement of the walls. No solid component was appreciated as well.

Both the above cases did not show any cyst in the lungs.

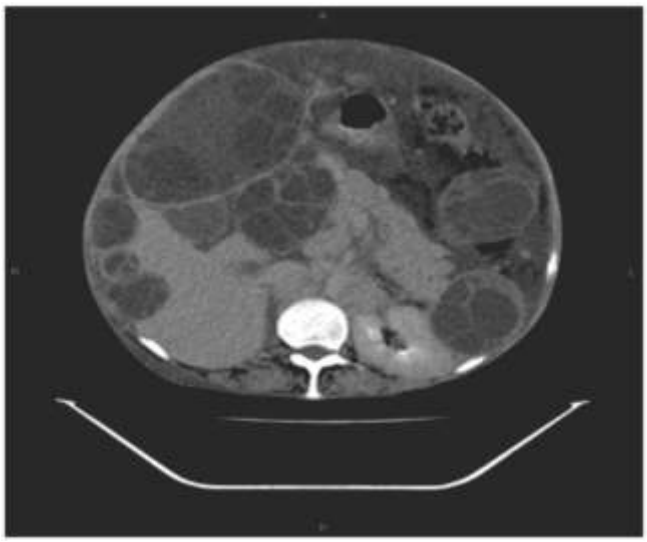


(Case - 1)

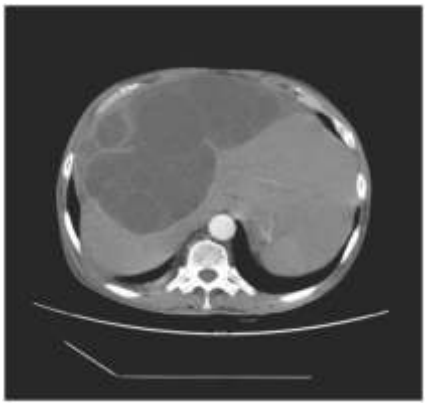
(Image 1 – Multiple thin walled intraperitoneal and hepatic cysts with daughter cysts within)



(Image 2- Multiple peritoneal cysts with peripheral enhancement)

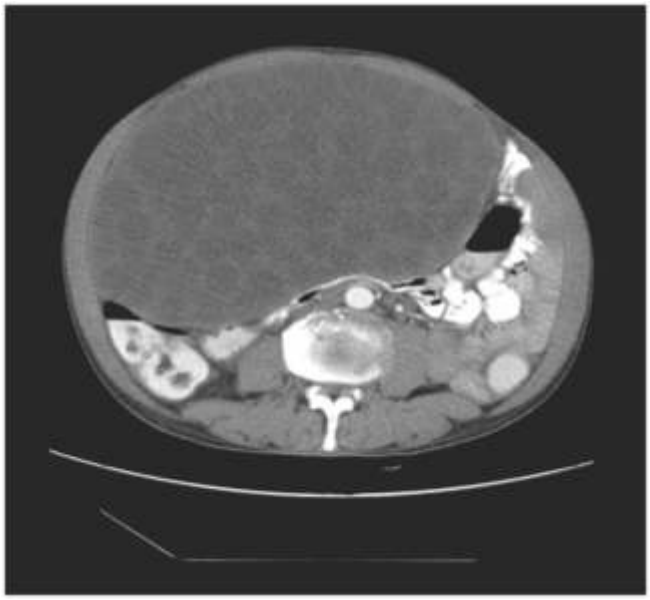


(Image 3- Multiple hepatic and splenic complex cysts with enhancement of the wall and the septa)

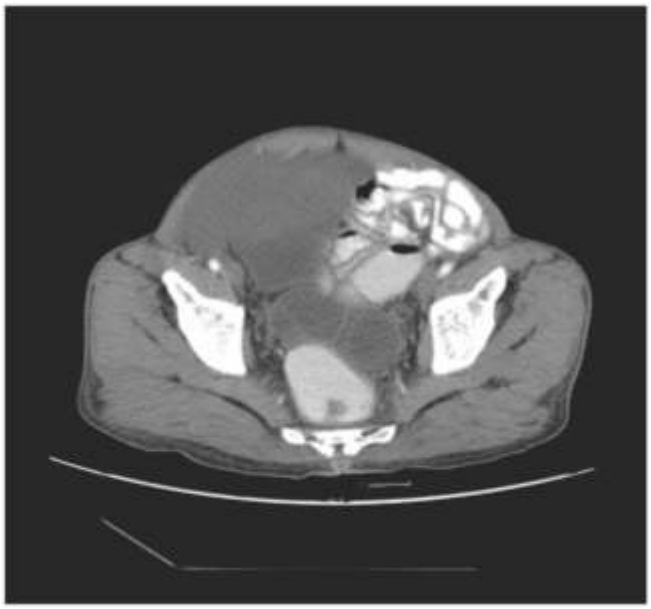


(Case - 2)

(Image 4 – CECT showing multiple peripherally enhancing cysts in liver)



(Image 5 – Large intra peritoneal hydatid cyst with daughter cysts within)



(Image 6- Peritoneal hydatid cysts in pelvis with daughter cyts within, with no significant contrast enhancement and no solid nodule)

Axial post contrast CT images of case I {image1, 2 and 3} show multiple intraperitoneal, hepatic and spleenic cysts. Multiple daughter cysts are seen within most of the parent cysts. Gross ascitis is noted.

Axial post contrast CT images of case II {image 4, 5 and 6} show multiple intraperitoneal and hepatic cysts. Multiple daughter cysts are seen within the parent cysts. No significant contrast enhancement is noted.

Discussion - Most of the people acquire the disease during their childhood but the clinical signs and symptoms appear at late adulthood [5]. If not treated the cysts generally calcifiy and reduce in size. However few cysts gradually enlarge in size [6]. These enlarging cysts are the cause of the symptoms and may further cause complications. The cases we present typically highlights the CT features of intra abdominal cysts.

The liver and lung are the commonest sites of involvement by the hydatid disease, although no site in the body may be completely immune from it [7]. Cysts in the peritoneal cavity account for 10–16% of the cases reported till date and mainly result from the rupture of concomitant liver cysts [8]. Primary peritoneal hydatid cyst is rare. Mosca et al. [9] reported abdominal hydatid disease in a series of 15 patients. Out of these eight patients showed cysts located in the peritoneum. Mansari et al. [10] reported 12 cases of peritoneal hydatidosis. In 11 out of 12 patients, it was secondary.

The other rare sites of rare presentations of the disease are kidneys (3%) [11].The spleen may be involved in about (4%) of the cases [7]. One of our cases shows involvement of the spleen. Cerebral Hydatid cysts occur in only 2% of all the cases reported [7]. Cardiac hydatid disease is very rare (0.02%–2% of cases) 4[7]. The other sites that have been reported to be involved are bones, pancreas, breast, ovaries, scrotum, thyroid gland, inguinal canal and soft tissues [7,11].

Hydatid cyst may be solitary or multiple. The type of the imaging modality used depends on the site and the size of the hydatid cyst. Ultrasonogarphy is the first line of screening for abdominal hydatidosis and it is especially useful for detection of cystic membrane, septa, and hydatid sand. CT scan best demonstrates cyst wall calcification and cyst infection. CT scan imaging is also the modality of choice in peritoneal seedling.[5] A hydatid cyst typically demonstrates a high attenuation value at unenhanced CT even without calcification[12]. Multivesicular cysts can depict a typical honeycomb pattern[5]. The septa represent the walls of the daughter cysts housed within the mother cyst. A “wheel spoke” pattern can be observed when the daughter cysts are separated by hydatid matrix [5].

In both of the cases we present patients were offered medical line of treatment. They showed improvement in symptoms after 3 months of the treatment. The treatment of choice for localized hydatid cysts in liver or lungs is surgical while the therapy for disseminated peritoneal hydatidosis remains medical [13]. Therapy with albendazole or praziquantel remains the mainstay of medical therapy.

Conclusion : Although hydatid disease is one of the common diseases in India, peritoneal hydatid cysts are rarely seen. The treatment consists of anti parasitic medicines like Albendazole or praziquantel. Surgery is indicated when the cyst is limited to liver or lung does not involve the peritoneum.

References :

1. Boss, SM Monga NK , Unusual presentation of a hepatic hydatid cyst. Australian and New Zealand Journal of Surgery 1974, 44: 407–409. doi: 10.1111/j.1445-2197.1974.tb03915.X
2. Amr SS, Amr ZS, Jitawi S, Annab H. Hydatosis in Jordan: an epidemiological study of 306 cases. Ann Trop Med Parasitol 1994;88: 623-627.
3 Yuksel M et al. Hydatid disease involving some rare locations in the body: a pictorial essay. Korean Journal of Radiology, 2007, 8:531–540
4. Nimish J Shah, Nikunj K Vithalani, Rahul K Chaudhary, Prashant N Mohite, Disseminated peritoneal hydatidosis following blunt abdominal trauma: A case report. Cases Journal 2008, 1:118doi:10.1186/1757-1626-1-118
5. Pedrosa I, Saiz A, Arrazola J, Ferreiros J, Pedrosa CS. Hydatid disease: radiologic and pathologic features and complications. Radiographics 2000; 3:795-817.
6. Ammann RW, Eckert J. Cestodes. Echinococcus. Gastroenterol Clin North Am 1996; 3:655-89.
7. Husen YA, Nadeem N, Aslam F, Bhaila I. Primary splenic hydatid cyst: a case report with characteristic imaging appearance. J Pak Med Assoc 2005; 5:219-21
8 Prousalidis J, Tzardinoglou K, Sgouradis L, Katsohis C, Aletras H. Uncommon sites of hydatid disease.World J Surg1998;22:17–22
9 Mosca F, Portale TR, Persi A, Stracqualursi A, Puleo S. Uncommon abdominal sites of hydatid disease. Our experience with the surgical treatment of 15 cases.Chir Ital2004;56:333–344

10 Mansari O, Zentar A, Sair K, Sakit F, Bounaim A, Janati IM. Peritoneal hydatid cysts. Apropos of 12 cases.Ann Chir2000;125:353–357

11. Polat P, Kantarci M, Alper F, Suma S, Koruyucu MB, Okur A. Hydatid Disease from Head to Toe. Radiographics 2003; 23:475-94.

12. Shah DS, Parikh H, Shah B, Banuprakash S, Shah J. Imaging appearances of hydatid cyst. Ind J Radiol Imag 4:533-535.

13. World Health Organization:Guidelines for treatment of cystic and alveolar echinococcosis in humans. WHO Informal Working Group on Echinococcosis. Bull World Health Organ1996,74(3):231-42.