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Letter to the Editor

Occurrence of Massively Enlarged Multiple Hydatid Cysts in the Lung and Liver of a Pediatric Patient in Pakistan

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Dear Editor-in-Chief

Human echinococcosis is an endemic disease in different areas of Pakistan (1). A female of 4-year-old, a resident of Swabi, Khyber Pakhtunkhwa (KPK) province of Pakistan was presented to Jamal Medical Center Swabi, with the complaint of sudden severe intermittent abdominal pain for 15 days which was more at right hypochondrium and was colicky in nature, relieved with medication, neither aggravating factor nor any association with respiration was found. This pain was associated with low grade intermittent fever with no specific pattern, decreased appetite, 2 to 3 episodes of

nonprojectile, non-bilious vomiting per day containing both food particles and blood, easy fatigability, lethargy, pallor and exertional shortness of breath. The patient spent most of her time in neighbors and outside, playing with other children and their family have no pets at home.

Before her referral, in October 2019, the patient had few episodes of undocumented fever for 6 months along with chest in drawing and shortness of breath, so she was treated by some local physician, the record of which was not available. She was investigated and given fluids and antibiotics. Next day abdominal ul-



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trasonography (USG) was performed which was suggestive of cyst in the liver. Chest radiograph (X-Ray) revealed white out lung on right side (collapsed right side) as shown in Fig. 1. A subsequent computed tomography (CT) scan in a regional hospital revealed large thick walled cyst about 8x7.7cm in right lobe of the liver without any septation or calcifica-

tions, started just below the bifurcation of the trachea up to the sub-diaphragmatic area causing compression on the liver more suggestive of hydatid cyst. She then was referred to pediatrician of Khyber teaching hospital while her parents wanted home treatment and refused admission in pediatric ward.

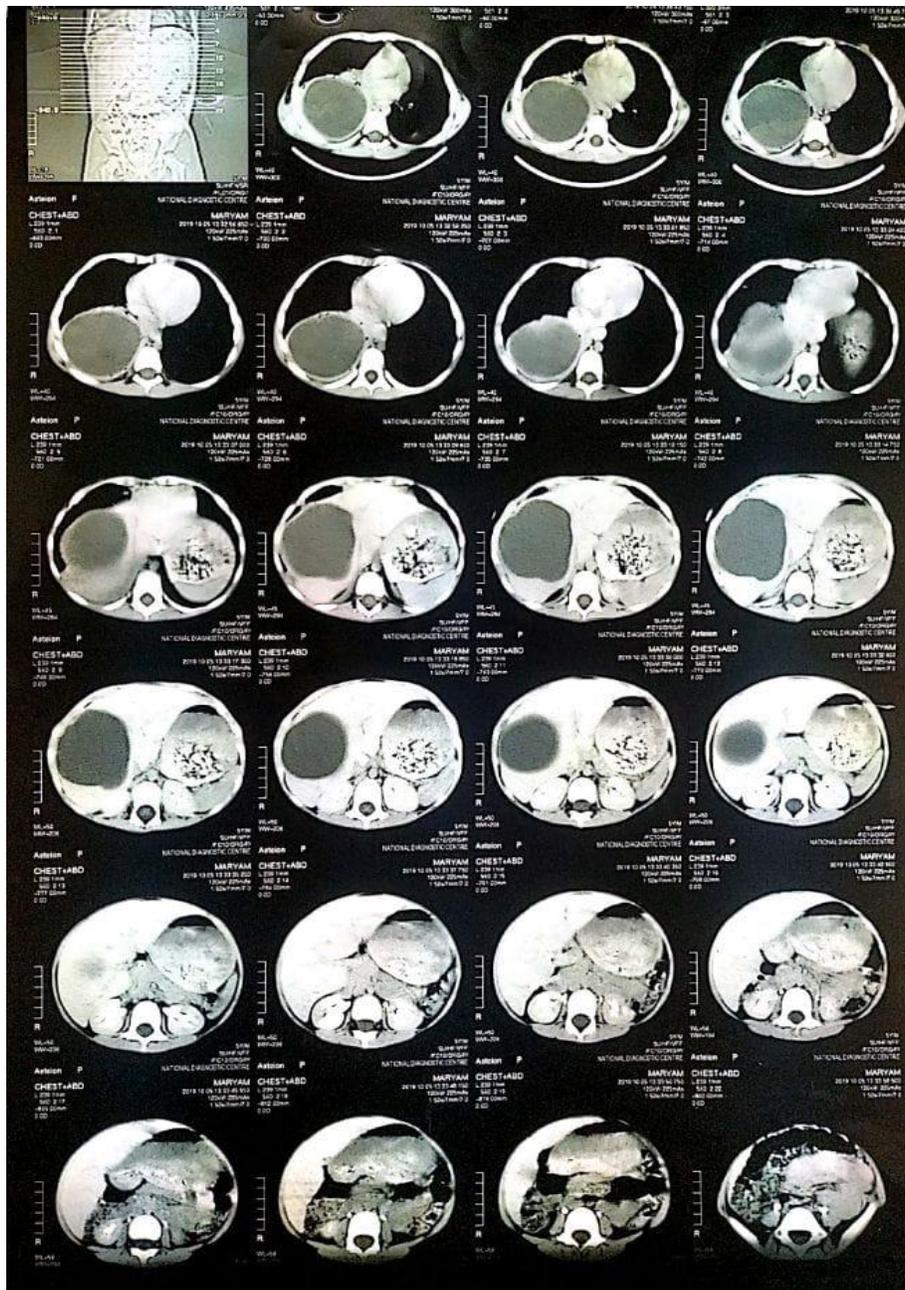


Fig.1: Chest radiograph showing hydatid cyst in lung

In October 2019, Patient was taken to Shifa International Hospital, a number of laboratory tests e.g. liver function test and complete blood cell count were suggested and conducted as shown in Table 1. Abdominal USG findings showed an enlarged liver measuring 124mm in cranio-caudal dimension with homogenous texture. A 81x 56 x 76 mm cyst with 182 ml volume and dense echoes and

membranous folds was seen in the right lobe of the liver. Surgery is felt to be very risky because the patient has developed the cyst of a considerable size and has been treated with oral albendazole since 2019, however, no decrease has been recorded in the cyst size. On the basis of these diagnostic findings, the final diagnosis of hepatic cystic echinococcosis was made.

Table 1: Results of laboratory investigations

<i>Test</i>	<i>Results</i>	<i>History</i>	<i>Reference Range</i>
HM23-CBC Diff profile (CS11)	24/O3/2020	18/10/19	
WBC Total	12480/ μ l	9730/ μ l	(4000/ μ l - 12000/ μ l)
RBC total	4.83 m/ μ l	4.44 m/ μ l	(3.8 - 5.8) m/ μ l
Hemoglobin	10.1 g/dL	8.6 g/dL	(11.5-14.5)g/dL
HCT	31.2%	27.9%	(33- 43)%
MCV	64.6 fL	62.8 fL	(76 - 90)fL
MCH	20.9 pg	19.4 pg	(2s 31)pg
MCHC	32.4 g/dl	30.8 g/dl	(32 - 36)g/dl
Platelet Count	365000 / μ l	346000/ μ l	(1 50.000 - 400,000)/ μ l
Neutrophils	54%	17%	(30 - 55)%
Lymphocytes	38%	16%	(40 - 60)%
Monocytes	6%	7%	(1 -4)%
Eosinophils	2%	0%	(1-2)%
Basophil	0%	0 %	(0 - 0.75)%
RDW	19.3%	18.1%	(11.5 - 14.0)%
MPV	8.8 fL	8.8 fL	(6.8 -10.2)fL
SGPT (ALT)	40 U/L		Female: upto 33 U/L
Creatinine	0.22 mg/dL	0.30 mg/dL	Male 0.72-1.25 mg/dL, Female 0.57-1.11 mg/dL
Estimated GFR using CKD-EPI (PK)	N/A mL/min	N/A mL/min	> 60 mL/min/1.73m ²

Hydatid cyst disease is an endemic disease in Pakistan (1).The disease occurs in those people who have a close contact with dogs after the accidental intake of eggs of *Echinococcus* spp. Patients may remain asymptomatic for a long time (2). It is most common in liver (70%) and lungs (25%) (3). It can be diagnosed when they show some non-specific signs and symptoms and also by routine US and laboratory investigations. Abdominal

USG is an important tool that facilitate to diagnose this condition. The confirmation of lesions in liver was done by using CT scans. In present case, surgery is not performed yet as the size of cyst was large. Most of symptomatic cysts have chance of being ruptured and may cause secondary infection (4). If surgery is felt to be very risky and there is risk of safety in total resection of the lesions then endoscopic and percutaneous interventions (EPIs)

are preferred (5). The prevention of CE is possible after interrupting its transmission cycle (6). Maintaining proper hygiene as well as public awareness, standard abattoirs, deworming dogs and livestock vaccination will help to control and provides a direction towards the management of CE.

Conflict of interest

All authors declared that there was no conflict.

References

1. Ahmed H, Ali S, Afzal MS, Khan AA, Raza H, Shah ZH, Simsek S. Why more research needs to be done on echinococcosis in Pakistan. *Infect Dis Poverty*. 2017; 6(1):90.
2. Yasin F, Ghazanfar H, Assad S, Bhatti SA. Management of massively enlarged multiple hydatid cysts in the liver of a pediatric patient. *Cureus*. 2017; 9(9):1643.
3. Senturk A, Er M, Karalezli A, Yakut ZI, Soyuturk AN, Cetin H, Canan Hasanoglu HC. A case of pulmonary artery hydatid cyst observed on endobronchial ultrasound. *Iran J Radiol*. 2015; 12(1):e15995 .
4. Tanju S, Toker A, Ünal ES, Dilege S, Kalaycı G. Hydatid cyst in the distal pulmonary artery: A case report. *Turk Respir J*. 2005; 6(2):102-4.
5. Brunetti E, Kern P, Vuittn DA. Expert consensus for the diagnosis and treatment of cystic and alveolar echinococcosis in humans. *Acta Trop*. 2010; 114(1):1-16.
6. Craig PS, McManus DP, Lightowlers MW et al. Prevention and control of cystic echinococcosis. *Lancet Infect Dis*. 2007;7(6):385-94.