Pediatrics and Neonatology (2019) 60, 695–696

Available online at www.sciencedirect.com

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Images

Concomitant pediatric abdominal and pulmonary tuberculosis

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Received Feb 26, 2019; received in revised form May 16, 2019; accepted Jun 13, 2019
Available online 28 June 2019

A 10-year-old boy was referred from a local clinic to our institute due to abdominal fullness and ascites. He gained 4 kg in 4 months, despite reduced appetite. After admission, chest radiograph revealed bilateral pleural effusion with atelectasis and increased infiltration of bilateral lower lobes (Fig. 1A). Tachypnea and fever developed (Fig. 1B). Paracentesis yielded straw-colored ascites with leukocyte count of 1410 cells/mm^3. with a relative lymphocytic pleocytosis (98%). Abdominal computer tomography (CT) scan showed massive ascites, thickening of omentum and peritoneum, associated with lymphadenopathy (Fig. 2A). Laparoscopic surgery revealed thickened peritoneum and omentum coated with fibrinous strands (Fig. 2B). Specimens of peritoneal lesions were obtained, which revealed acid-fast bacilli and caseating granulomas with Langhan's giant cells. Therefore, the patient was diagnosed with tuberculous peritonitis. Although sputum acid-fast stain was negative, the sputum tuberculous culture, ascitic and pleural effusion adenosine deaminase (ADA), interferon-gamma release assays (IGRA) confirmed the diagnosis of tuberculosis (TB). By using the optimal cut-off value of 39 IU/L (range: 36–40 IU/L), an elevated ascitic ADA level of 71 IU/L confirmed the diagnosis of TB peritonitis.[1] The boy was given anti-TB therapy. After completing the treatment, his ascites and associated symptoms were resolved.

Our case presented with abdominal fullness due to unexplained lymphocytic ascites with serum-ascites albumin gradient $<$1.1 g/dL[2] without any underlying liver disease. Since he lived in Vietnam, one of the countries with high burden of TB according to 2017 WHO report,[3] TB peritonitis was highly suspected.

Pediatric TB should be as a spectrum of *Mycobacterium tuberculosis* complex exposure, from infection to disease. The bacteriologic confirmed rate of pediatric TB is lower than that in adults, the diagnosis is often diagnosed clinically. To confirm the diagnosis extrapulmonary TB, specimens should be obtained from any site where TB infection is suspected. For this case, acid-fast smear and TB culture of

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https://doi.org/10.1016/j.pedneo.2019.06.006

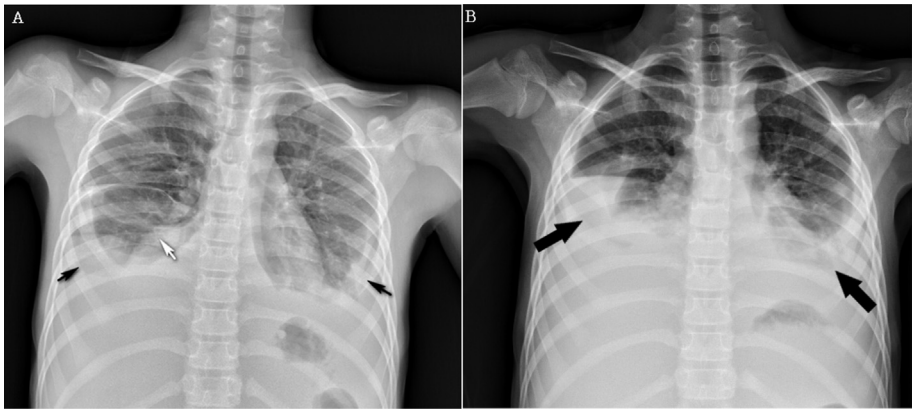

Figure 1 A & B. Chest radiograph revealed bilateral pleural effusion (black arrows) with passive atelectasis (white arrow) and increased infiltration of bilateral lower lobes.

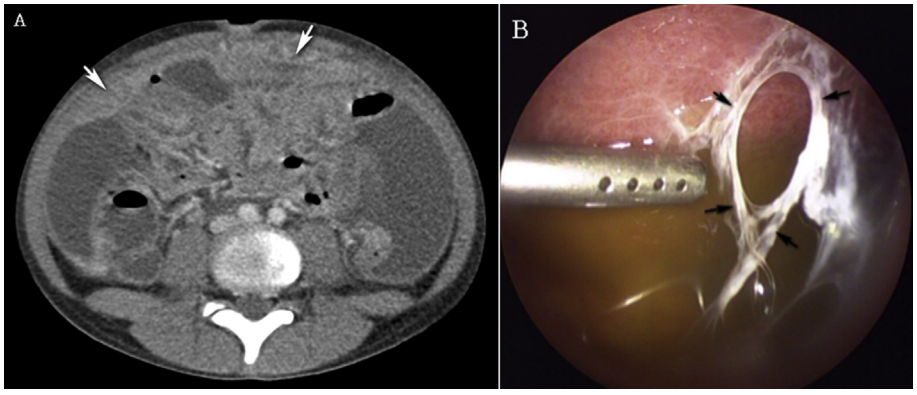

Figure 2 A. Abdominal CT scan with contrast enhanced showed massive ascites with thickening of omentum and peritoneum (white arrow), associated with lymphadenopathy. B. Laparoscopic surgery found thickened peritoneum and omentum coated with fibrinous strands (black arrows).

ascites were nondiagnostic. Abdominal CT revealed thickened peritonium and omentum, diagnostic laparoscopic confirmed TB in the patient. Besides, ascitic ADA and IGRA supported the diagnosis of pulmonary and peritoneal TB.

Physicians must carefully review the patient's contact history, epidemiologic factors (known or possible TB exposure, past or present residence, or travel to a high TB burden area) and relevant clinical presentations. In addition, additional diagnostic tools, such as ADA and IGRA, may help the diagnostic yield of TB.

Conflict of interest

The authors have no conflicts of interest relevant to this article.

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