CLINICAL IMAGE

Suspicion of synchronous colon carcinoma that turned out to be abdominal tuberculosis

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A 75-year-old man was admitted to an internal medicine department due to constant abdominal pain in different locations and weight loss of around 6 kg in the last 6 months. His medical history included arterial hypertension, atrial fibrillation, chronic obstructive pulmonary disease, interstitial pulmonary disease, sliding hiatal hernia, and colonic diverticulosis. Abdominal computed tomography (CT) showed a thickened wall of the terminal ileum and cecum (FIGURE 1A) and a tumor in the descending colon (FIGURE 1B). A suspicion of synchronous colon cancer was raised. The colonoscope reached only the sigmoid colon due to sharp angulation, so biopsy was impossible and exploratory laparotomy was considered. Due to resting dyspnea and absence of obstruction or bleeding the patient was found ineligible for the procedure. Chest X-ray showed adhesions on both domes of the diaphragm, pleural thickening, bilateral emphysematous bullae, and fibrous lesions (FIGURE 1C). Chest CT showed pulmonary emphysema, reticular lesions and pleural thickening, honeycomb pattern, bronchiectases, and pleural effusion (FIGURE 1D). The patient then developed diffuse peritonitis and required emergency laparotomy that showed perforation of a small bowel tumor. The Hartmann procedure with terminal ileostomy was performed. Analysis of the specimens showed multiple caseating granulomas, consistent with a diagnosis of tuberculosis (TB) (FIGURE 1E–1H). Interferon gamma release assay (IGRA) confirmed a latent TB infection. Antituberculous therapy was started, however, the patient died 5 weeks later.

The most common form of TB is the pulmonary one, but in 10% to 40% of cases the disease is located in the lymph nodes (40.4%), pleura (19.8%), bones / joints (11.3%), genitourinary tract (6.5%), cerebral meninges (5.4%), or peritoneum (4.9%). Abdominal TB (ATB) may involve the alimentary tract, female genital tract, liver, spleen, or pancreas. Intestinal and peritoneal presentation is

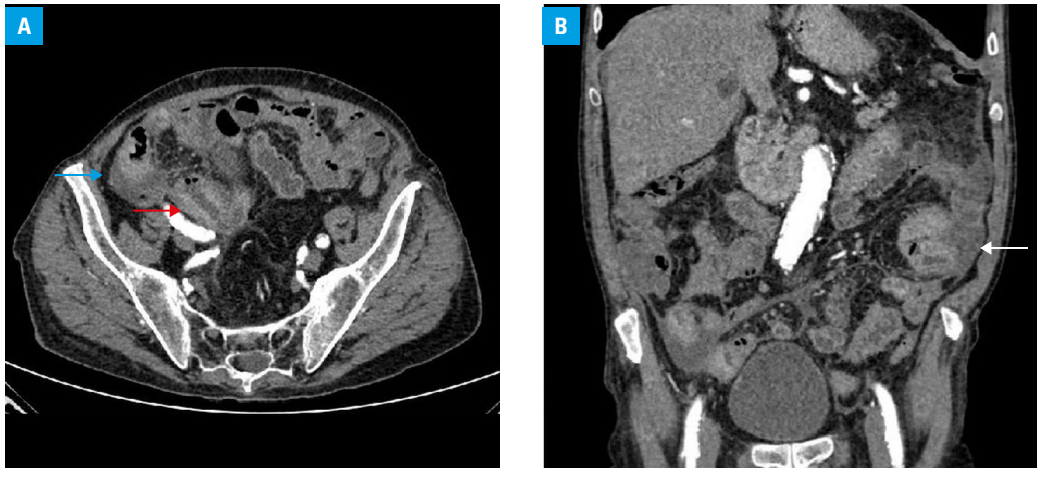

FIGURE 1 **A** – computed tomography (CT) imaging (arterial phase, transverse view) showing a thickened wall (up to 10 mm) of the terminal ileum (red arrow) and cecum (blue arrow); **B** – CT imaging (arterial phase, coronal view) showing a tumor of the descending/sigmoid colon, measuring 58 mm × 48 mm (arrow)

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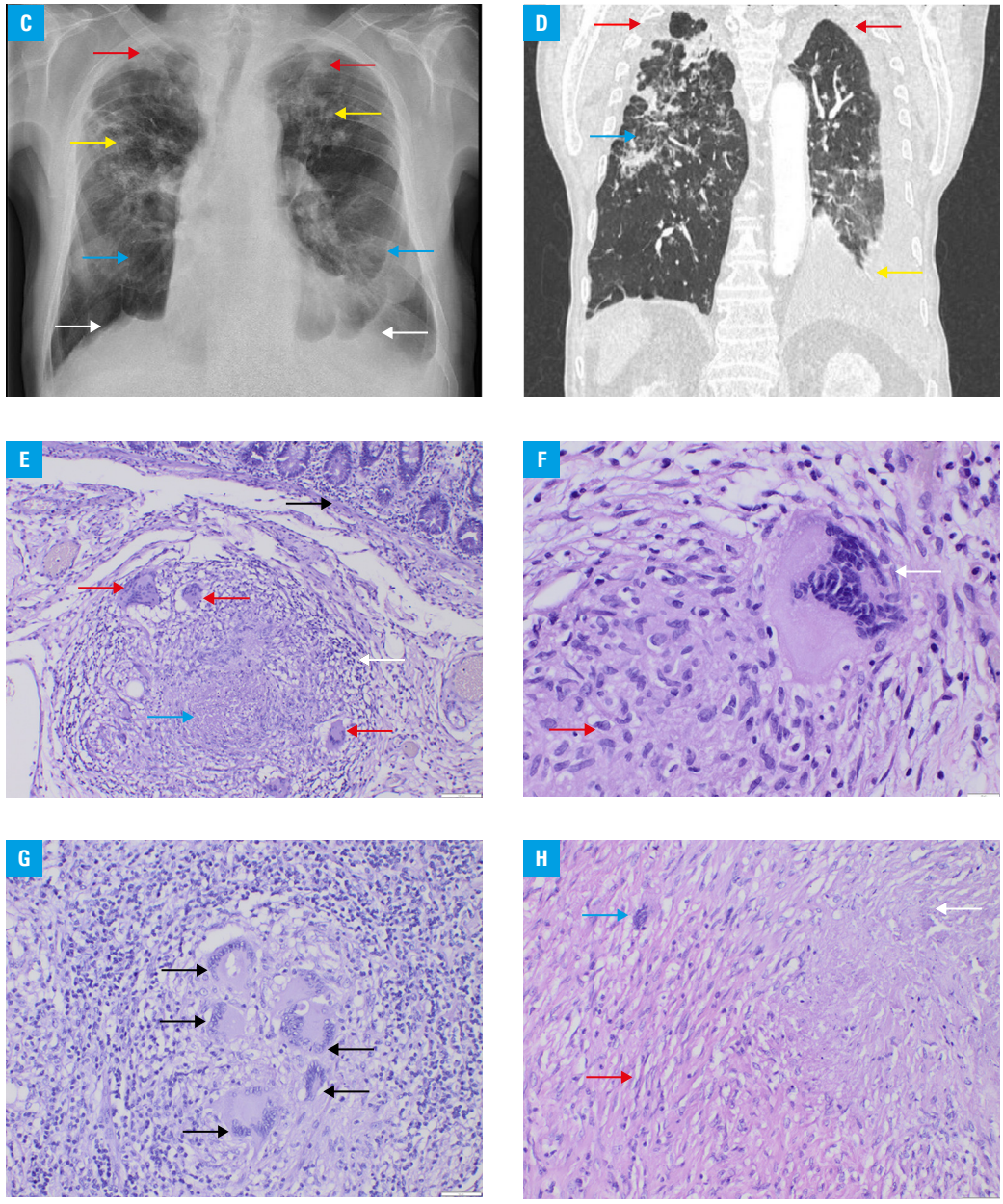

FIGURE 1 **C** – chest X-ray showing adhesions on both domes of the diaphragm and costodiaphragmatic recesses (white arrows), pleural thickening in both apices and infraclavicular areas (red arrows), bilateral emphysematous bullae of various size (blue arrows), and fibrous lesions in both the upper and middle right field retracting the hila upwards (yellow arrows); **D** – CT imaging (pulmonary window, coronal view) showing reticular lesions and pleural thickening in both upper lobes (red arrows), areas with a honeycomb pattern (blue arrow), and pleural effusion (50 mm on the left) (yellow arrow); **E**–**H** – histopathological analysis (hematoxylin and eosin staining) showing granuloma (white arrow) with giant multinuclear Langerhans-type cells (red arrows) and central necrosis (blue arrow) below the surface of mucosa (black arrow) (**E**, magnification × 40); granuloma with Langerhans-type (white arrow) and epithelioid cells (red arrow) (**F**, magnification × 100); granuloma with Langerhans-type cells (arrows) within the peri-intestinal lymph node (**G**, magnification × 200); and coagulative (caseous) necrosis (white arrow) surrounded by florid inflammatory infiltration (red arrow) and a single preserved Langerhans-type cell (blue arrow) (**H**, magnification × 100)

the most common, with frequent involvement of the ileocecal region (85%). ATB usually results from a spread from the lungs by ingestion of sputum, hematogenous, or lymphogenous route.[1-3]

ATB is a relatively rare disease in developed countries, including most of Europe. Its incidence is rising due to migrations and immune deficiencies (HIV/AIDS, liver cirrhosis, diabetes, chronic renal disease, drugs such as corticosteroids, malignancies, and undernourishment). ATB is common among migrants from the Middle and Far East, East Europe, and Africa. Two billion people worldwide may harbor a latent infection and experience reactivation.[1,2,4,5]

Common symptoms include abdominal pain (71%–100%), weight loss (40%–90%), ascites (90%), fever (37.5%–70%), night sweats (75%), lymphadenopathy (64%), diarrhea (11%–47%), and distension (35%–53%). Physical examination may reveal a mass (40%) or diffuse tenderness.

Anemia and elevated inflammatory markers are typical (>90%). CT may reveal lymphadenopathy (95%), ascites (42.5%), and thickened peritoneum and small-bowel wall (30%), possibly with nodular implants. Pronounced thickening of the peritoneum may resemble carcinomatosis.[1,3,5]

Exploratory laparotomy, laparoscopy, or ileocolonoscopy with biopsy is recommended. TB can be confirmed by various methods. The specificity of culture (25%) and staining for acid-fast bacilli is low (3%–20%). The sensitivity of a polymerase chain reaction assay is varying (7%–66%). Caseating granulomas on histopathology are pathognomic but they do not occur in all cases (46%–100%). IGRA remains the recommended method for TB confirmation.[1-5]

ATB may mimic other infections (periappendiceal abscess, nontuberculous peritonitis), inflammatory bowel diseases (Crohn disease), and malignancies (peritoneal carcinomatosis, lymphoma, ovarian cancer). The mortality of untreated tuberculous peritonitis is 47%–49%, but below 5% with treatment. Antituberculous therapy should involve 2–4 drugs and last at least 6 months.[1-5]

ARTICLE INFORMATION

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