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LETTER TO THE EDITOR

Dropped gallstone-induced perihepatic abscess mimicking malignancy: the diagnostic value of multimodality imaging

Maligniteyi taklit eden düşmüş safra taşı kaynaklı perihepatik apse: tanıda multimodal görüntülemenin rolü

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To the Editor,

Laparoscopic cholecystectomy is the standard of care for symptomatic gallstone disease. Although it is generally regarded as a safe procedure, intraoperative gallstone spillage has been reported in approximately 7.3% of cases, with unretrieved peritoneal gallstones occurring in about 2.4%[1]. Abscess formation following gallstone spillage is exceedingly rare[2]. However, such abscesses often present with nonspecific and misleading clinical and imaging features[3]. We report a case where an integrated multimodality imaging strategy was crucial for accurately identifying perihepatic and subphrenic abscess resulting from dropped gallstones, thus avoiding an erroneous diagnosis of malignancy.

A 49-year-old male presented to our tertiary care center with a four-month history of cough, night sweats, and hemoptysis, which commenced following a laparoscopic cholecystectomy performed at an external institution. During the preoperative period, the patient's white blood cell count was 11,270/mm^3, and the C-reactive protein (CRP) level was 20,90 mg/L.

An initial external computed tomography (CT) scan revealed a nodular lesion adjacent to the diaphragm and the right lower lung lobe, which was interpreted as highly suspicious for a primary or metastatic neoplasm. Subsequent 18F Fluorodeoxyglucose (FDG) Positron Emission Tomography (PET)-CT at our institution revealed a perihepatic-subphrenic fluid collection with a photopenic core and intense peripheral FDG avidity (maximum SUV 12.12). While this pattern is characteristic of an inflammatory or infectious process, a neoplastic etiology could not be definitively excluded due to the initial high index of suspicion for malignancy. Consequently, an image-guided tru-cut biopsy was pursued to establish a definitive diagnosis and exclude neoplasia.

Histopathological examination revealed predominantly lymphocytic inflammation with no evidence of malignant cells. Due to the patient's persistent clinical deterioration, a repeat contrast-enhanced CT was performed, which confirmed consolidation in the right lower lung lobe with ill-defined diaphragmatic borders, along with a cystic perihepatic-subphrenic lesion containing internal hyperdense nodular opacities (Figure 1a).

Subsequent abdominal magnetic resonance imaging (MRI) demonstrated a fluid collection with restricted diffusion on diffusion-weighted imaging (Figure 1b). The collection appeared hyperintense on T2-weighted images and contained internal T2-hypointense nodularity (Figure 1c). On post-contrast T1-weighted images, it exhibited strong peripheral enhancement (Figure 1d).

Surgical intervention was subsequently performed. During the procedure, a firm mass adherent to the diaphragmatic undersurface was encountered; approximately 30–40 mL of purulent fluid and several gallstones (4–5) were removed. Histopathologic assessment confirmed chronic

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inflammation, bile pigment deposition, and gallstones, providing a definitive diagnosis of an abscess induced by dropped gallstones. Ceftriaxone 1 g was administered twice daily starting from the postoperative day and continued throughout the hospitalization period. No complications were observed during the postoperative follow-up.

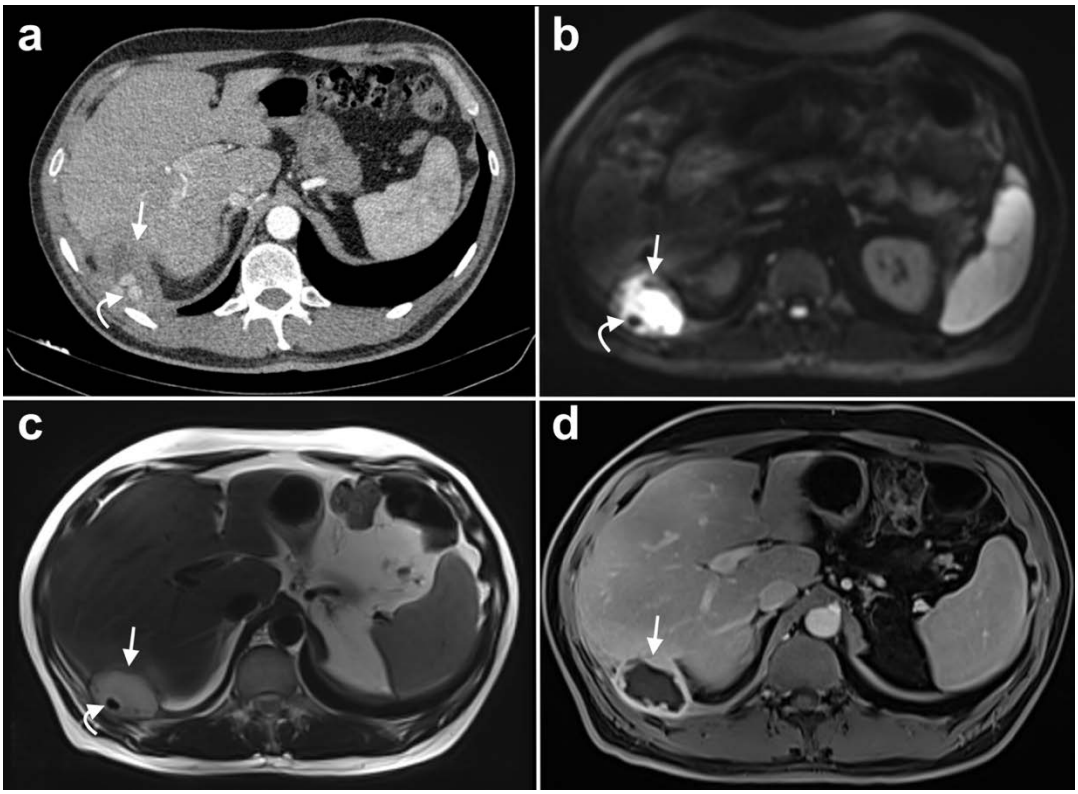

Figure 1.(a) Contrast-enhanced axial abdominal computed tomography image demonstrates a perihepatic fluid collection (white arrow) containing internal hyperdense foci (curved arrow) consistent with gallstones. (b) Axial diffusion-weighted magnetic resonance image (MRI) reveals restricted diffusion within the collection (white arrow) and internal hypointense nodularity (curved arrow) compatible with gallstones. (c) Axial T2-weighted MRI shows a hyperintense collection with internal hypointense nodularity (curved arrow) representing gallstones. (d) Axial post-contrast T1-weighted MRI demonstrates a collection with marked peripheral enhancement (white arrow).

This example highlights a considerable diagnostic dilemma in patients with a history of cholecystectomy. The imaging appearance of an abscess caused by spilled gallstones can simulate malignancy, especially when manifesting as a mass with diaphragmatic involvement and elevated FDG avidity, a recognized interpretive challenge[4,5].

As shown here and corroborated by existing literature, the pivotal diagnostic clue lies in recognizing intrinsic hyperdense or T2-hypointense nodules inside the abscess, which are highly indicative of spilled stones[3]. Awareness of this imaging pattern is critical to avoid needless oncologic workup and to direct appropriate surgical intervention for effective source control[3,5]. In conclusion, in any patient with a history of laparoscopic cholecystectomy who presents with a late-onset perihepatic collection, a dropped gallstone sequela should be considered. Imaging studies should be meticulously scrutinized for the characteristic internal density changes that point to retained gallstones, a crucial step in differentiating this entity from malignancy and guiding accurate management.

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