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IMAGE | PATHOLOGY

Adenosquamous Carcinoma of the Gallbladder With Sarcomatoid Features

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CASE REPORT

A 51-year-old woman presented with left lower quadrant pain and the laboratory results showed anemia and abnormal liver function test. Computed tomography showed thickened gallbladder with multiple enhancing lesions throughout the liver, suspicious for malignancy. Biopsy from the liver lesion showed poorly differentiated carcinoma. The immunohistochemical stains were positive for CK7 and negative for CK20, CDX2, CK19, and desmin, confirming it to be of pancreaticobiliary origin. The patient underwent cholecystectomy and segmental liver resection of segments IVB and V. Grossly, the gallbladder had a thickened white to a pale tan wall, measuring up to 0.5 cm in thickness and extending to the adjacent liver parenchyma. There is purulent fluid as well as many gold-faceted stones aggregating to 4.5 × 7.0 × 0.6 cm (Figure 1).

Microscopically, the gallbladder showed extensive necrosis, squamous metaplasia with invasive squamous cell carcinoma, glandular-type invasive component, and focal areas of sarcomatoid differentiation (Figure 2). Immunohistochemistry showed the tumor cells positive for CK7, including the sarcomatoid part, confirming the epithelial nature of the tumor (Figure 3). Analysis of our patient's genome by next-generation sequencing assay revealed Tier III variants. Among these mutations, PMS2 p.K301N is deemed likely pathogenic and has been associated before with hereditary cancer-predisposing syndrome, whereas the remaining variations have uncertain significance. After the surgery, the patient had radiofrequency ablation of residual cancer tissue; however, her hospital course was complicated by cholangitis and septicemia. She did not tolerate the chemotherapy, and the patient died 5 months after the initial diagnosis.

Carcinoma of the gallbladder is more frequent in women, with more than 90% of patients aged older than 50 years. It is common in Asian countries.[1] There is a definite association between gallbladder carcinoma and cholelithiasis. Adenosquamous carcinoma of the gallbladder consists of both glandular component and squamous component, which, by definition, must compromise 25%–99% of the

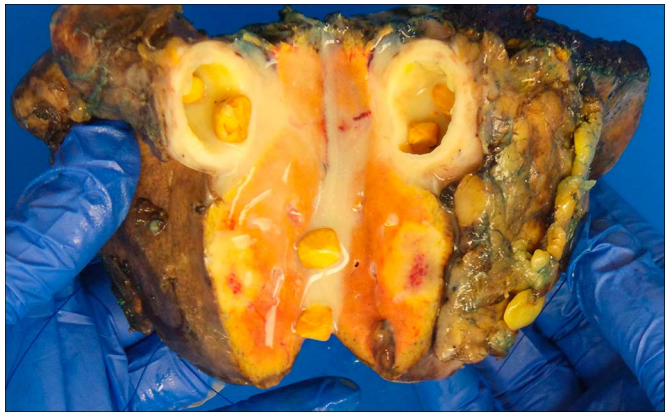

Figure 1. Cross sections of the gallbladder show thickening of the wall extending to the liver with necrosis and multiple gall stones.

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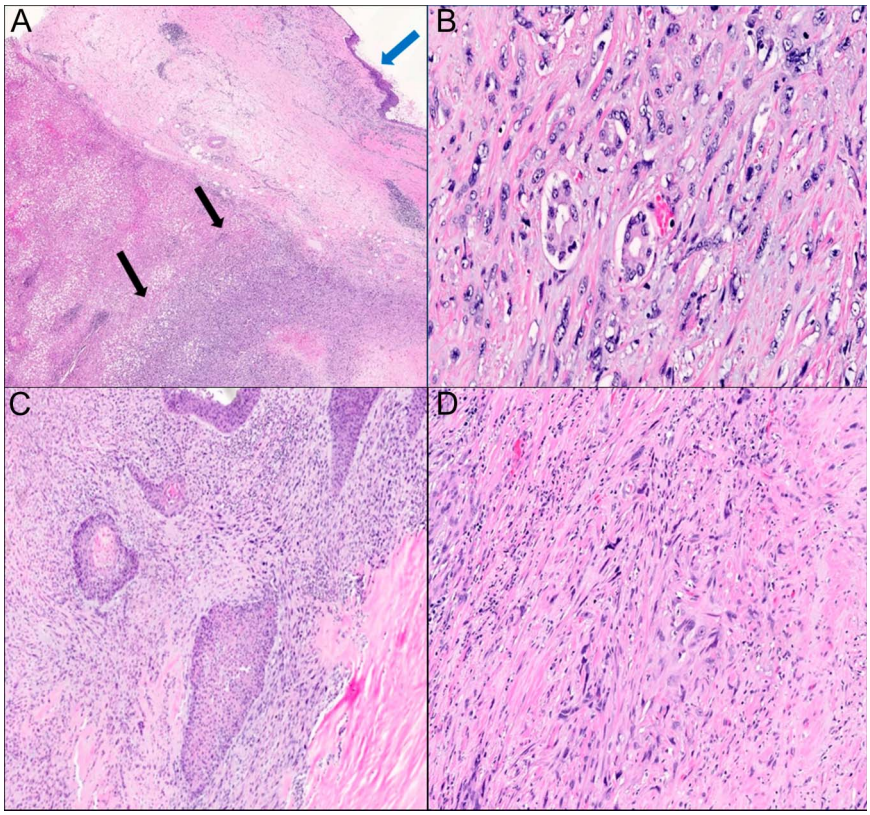

Figure 2. (A) Low power of the gallbladder epithelium with squamous metaplasia (blue arrow) and adjacent liver parenchyma with infiltrating tumor (black arrows) (hematoxylin and eosin stain, 2× magnification), (B) higher power of the tumor showed malignant glandular component invading into the liver (hematoxylin and eosin stain, 60× magnification), (C) gallbladder with squamous metaplasia and invasive squamous cell carcinoma with keratin pearls compromising more than 30% of the tumor (hematoxylin and eosin stain, 20× magnification), and (D) sarcomatoid component of the tumor consists of pleomorphic bizarre spindle cells (hematoxylin and eosin stain, 40× magnification).

carcinoma.[2] It is a highly aggressive neoplasm with a high propensity to invade the liver directly.[3] Our case has a sarcomatoid component, a rare entity to be found along with the adenosquamous part of the lesion.[4,5] Comparing with sarcomatoid carcinoma, which also has both epithelial and mesenchymal components, but usually has other mesenchymal components such as osteoid or chondroid that stain positive for mesenchymal marker such as vimentin. However, in adenocarcinoma carcinoma, the mesenchymal markers are generally negative. Regarding the treatment, both entities have been associated with resistance to neoadjuvant therapy and poor outcome.

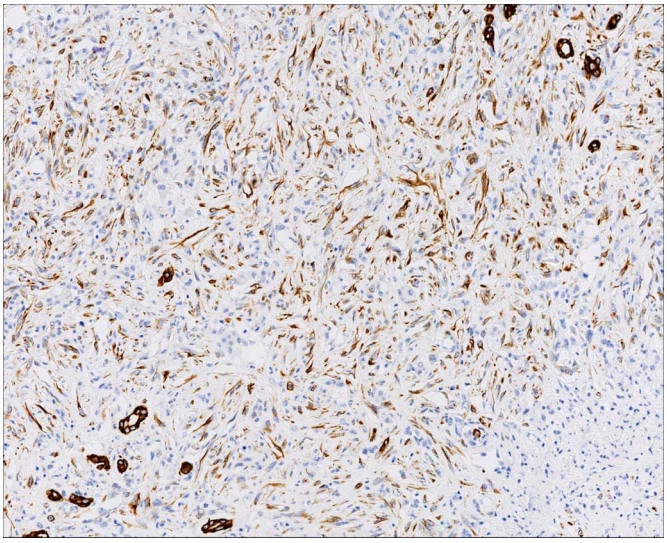

Figure 3. CK7 immunohistochemical stain is positive in the neoplastic cells (40× magnification).

DISCLOSURES

Author contributions: NK Majeed, IE Younes, and S. Karimi wrote the manuscript. S. Garzon edited the manuscript and approved the final version. NK Majeed is the article guarantor.

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REFERENCES

1. Giang TH, Ngoc TT, Hassell LA. Carcinoma involving the gallbladder: A retrospective review of 23 cases-pitfalls in diagnosis of gallbladder carcinoma. *Diagn Pathol.* 2012;7(1):10.

2. Shariff MH, Bhat SP, HL KP. An unusual presentation of adenosquamous carcinoma of gallbladder. *Int J Pathol Lab Med.* 2016;2(1): CS2.
3. Roa JC, Tapia O, Cakir A, et al. Squamous cell and adenosquamous carcinomas of the gallbladder: Clinicopathological analysis of 34 cases identified in 606 carcinomas. *Mod Pathol.* 2011;24(8):1069.
4. Suster S, Huszar M, Herczeg E, et al. Adenosquamous carcinoma of the gallbladder with spindle cell features. A light microscopic and immunocytochemical study of a case. *Histopathology*. 1987;11(2): 209–14.
5. Roa J, Tapia O, Cakir A, et al. Squamous cell and adenosquamous carcinomas of the gallbladder: Clinicopathological analysis of 34 cases identified in 606 carcinomas. *Mod Pathol.* 2011;24:1069–78.