

## CASE NOTE

**Cholecystic adenosquamous carcinoma mimicking Mirizzi syndrome**

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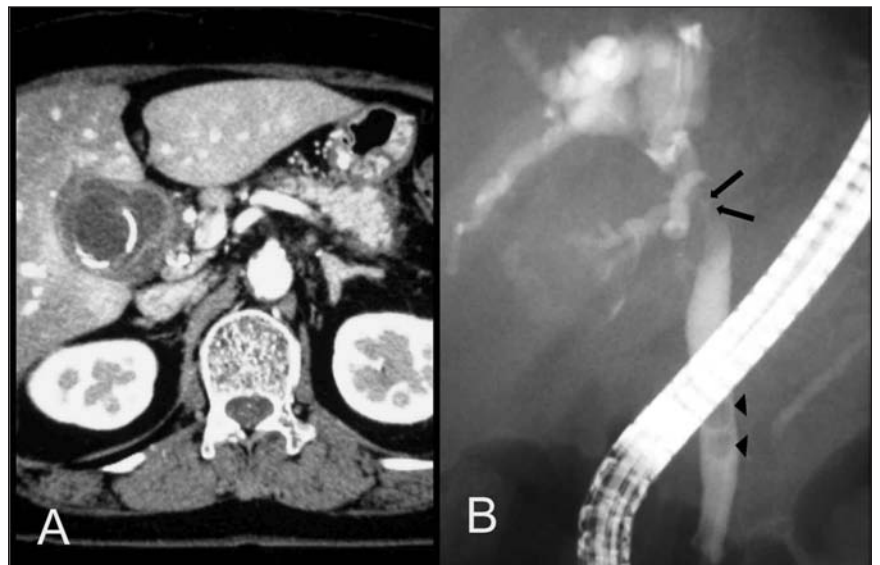
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**M**irizzi syndrome is a rare form of benign obstructive jaundice that is caused by a stone impacted either in the gallbladder neck or in the cystic duct, impinging on the right side of the common hepatic duct.<sup>1</sup> This entity is often difficult to distinguish from cancers. Indeed, 6%–28% of patients with a preoperative diagnosis of Mirizzi syndrome turn out to have a cancerous stenosis.<sup>2</sup> Here, we present the case of a patient with a cholecystic adenosquamous carcinoma (ASC) mimicking Mirizzi syndrome, and we emphasize some potential pitfalls in imaging study.

**CASE REPORT**

A 73-year-old woman was admitted to hospital with obstructive jaundice. She had received a diagnosis of cholelithiasis, and she had had several attacks during the past 10 years. Laboratory test results showed elevated serum bilirubin, aminotransferases and carbohydrate antigen 19–9 values. Abdominal ultrasound and computed tomography scans showed a gallstone in the gallbladder neck (Fig. 1A). Endoscopic retrograde cholangiography (ERC) results revealed smooth extrinsic compression and stenosis of the common hepatic duct, nonvisualization of the gallbladder and choledocholithiasis in the common bile duct (Fig. 1B). Repeated cytology examinations of the drained bile were negative.

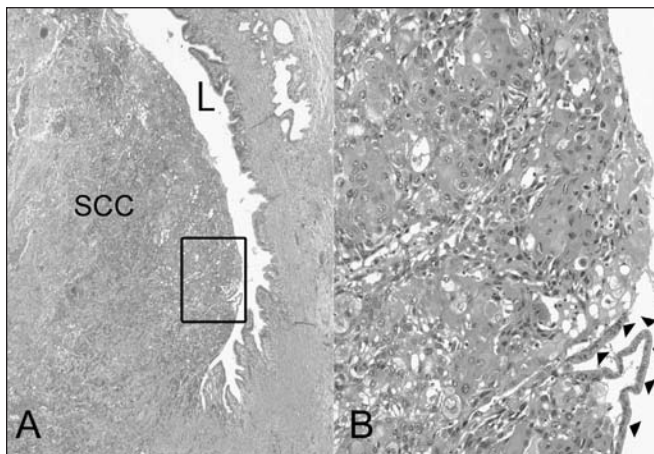


**Fig. 1.** Preoperative imaging studies. (A) Abdominal computed tomography scan showing a gallstone in the portis hepatis. (B) Endoscopic retrograde cholangiography results revealed the bile duct to be narrow with a smooth margin (arrows), and choledocholiths (arrowheads) were also seen in the inferior bile duct. We were no able to visualize the gallbladder.

During surgery, we found the gallbladder to be swollen and felt an impacted gallstone. We also found a small, metastatic tumour on her liver. Although the lesion suggested the cancer was unresectable radically, we performed an extended cholecystectomy and a Roux-en-Y reconstruction to relieve the patient of presumed biliary colic.

The resected specimen revealed that the lesion (located from the gallbladder neck to the common hepatic duct) contained an impacted 3-cm gallstone. Histology findings showed both cancer and fibrosis within the lesion. The cancer contained components of both adenocarcinoma and squamous cell carcinoma, and was diagnosed as an ASC. The cancer exhibited superficial spread to the entire gallbladder (adenocarcinoma component) and infiltration of the hepatoduodenal ligament (both adenocarcinoma and squamous cell carcinoma components). In particular, the nodular growth of the squamous cell carcinoma component had compressed the common hepatic duct from the right side, while partially preserving the non-neoplastic biliary epithelium (Fig. 2). This characteristic growth pattern of cancer and nearby fibrosis was responsible for smooth biliary stenosis of the common hepatic duct.

The patient's postoperative course was uneventful, and she was discharged 1 month after surgery. The patient died of an advanced tumour 4 months later.



**Fig. 2.** Histology findings of the resected specimen. **(A)** The lumen (L) of the common hepatic duct was smoothly compressed by cancer — squamous cell carcinoma (SCC) — accompanying periductal inflammation (hematoxylin and eosin staining, original magnification  $\times 20$ ). **(B)** High-power view of the region, indicated by an empty box in panel A, revealed squamous cell carcinoma partially covered with non-neoplastic biliary epithelium (arrowheads) (hematoxylin and eosin staining, original magnification  $\times 20$ ).

## DISCUSSION

Correct diagnosis of bile duct stenosis can be difficult in some cases. Both ERC and magnetic resonance cholangiography (MRC) can allow visualization of luminal surface deformities of the bile duct. In our patient's case, however, the cholecystic cancer could not be detected using either imaging modality. We propose 2 underlying patterns or mechanisms that may be responsible for a falsely benign-looking bile duct stenosis mimicking Mirizzi syndrome:

1. Characteristic pathologic features with a squamous cell carcinoma component
2. Inflammation and fibrosis for an impacted gallstone

In our patient's case, we found that the nodular growth pattern of the squamous cell carcinoma component was responsible for the finding of a benign-looking bile duct stenosis on examination by ERC. Typically, a bile duct cancer causes a stenosis with an irregular margin on ERC or MRC.<sup>3</sup> These findings are thought to reflect infiltration by adenocarcinoma, a common histologic type of bile tract cancer. Therefore, imaging modalities that detect luminal surface changes may be limited in their ability to evaluate the nodular growth pattern in squamous cell carcinoma. As yet, the characteristic features of ASC on imaging have not been elucidated, probably because of its rarity (3%–4% of gallbladder cancers<sup>4</sup>). Further study is needed to investigate the relation between the histologic characteristics of the squamous cell carcinoma component of ASC (or squamous cell carcinoma itself) and bile duct stenosis.

In conclusion, we elucidated the mechanism underlying a falsely benign-looking bile duct stenosis in a single case: the stenosis was a reflection of an unusual cancer growth. The accumulation and investigation of such cases, with radiologic–pathologic correlation, will contribute to the progress of diagnostic methodology.

**Competing interests:** None declared.

## References

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