Ampullary metastasis from breast cancer: an unusual finding

Fig. 1 Prominent "adenomatous-appearing" ampulla.

A third of women with breast cancer will develop metastatic disease [1]. However, gastrointestinal involvement with metastatic breast cancer is rare and may pose a diagnostic challenge [2–4]. We present two cases of metastatic breast cancer with unusual gastrointestinal findings.

Case 1: A 39-year-old woman with metastatic breast cancer presented with nausea and vomiting. Laboratory results revealed: total bilirubin 101 µmol/L, direct bilirubin 63.2 µmol/L, aspartate aminotransferase (AST) 111 IU/L, alanine aminotransferase (ALT) 216 IU/L, and alkaline phosphatase 122 IU/L. An abdominal ultrasound showed dilated bile ducts as well as a dilated common bile duct (CBD) of 14 mm. Endoscopic retrograde cholangiopancreatography (ERCP) revealed an "adenomatous"-appearing ampulla (**Fig. 1**).

The cholangiogram revealed a stricture in the distal CBD with proximal dilatation. Histologic sections show an infiltrate of individual round, discohesive, malignant cells within the lamina propria, characteristic of metastatic lobular carcinoma of the breast. Immunohistochemical stains for broad-spectrum cytokeratin (AE1/3) were strongly reactive in the malignant cells and differentiating the cells from histiocytes (**Fig. 2**), confirming the diagnosis of metastatic carcinoma from breast primary.

Unfortunately, the patient underwent a complicated course, culminating in gastric outlet obstruction requiring gastroenterostomy.

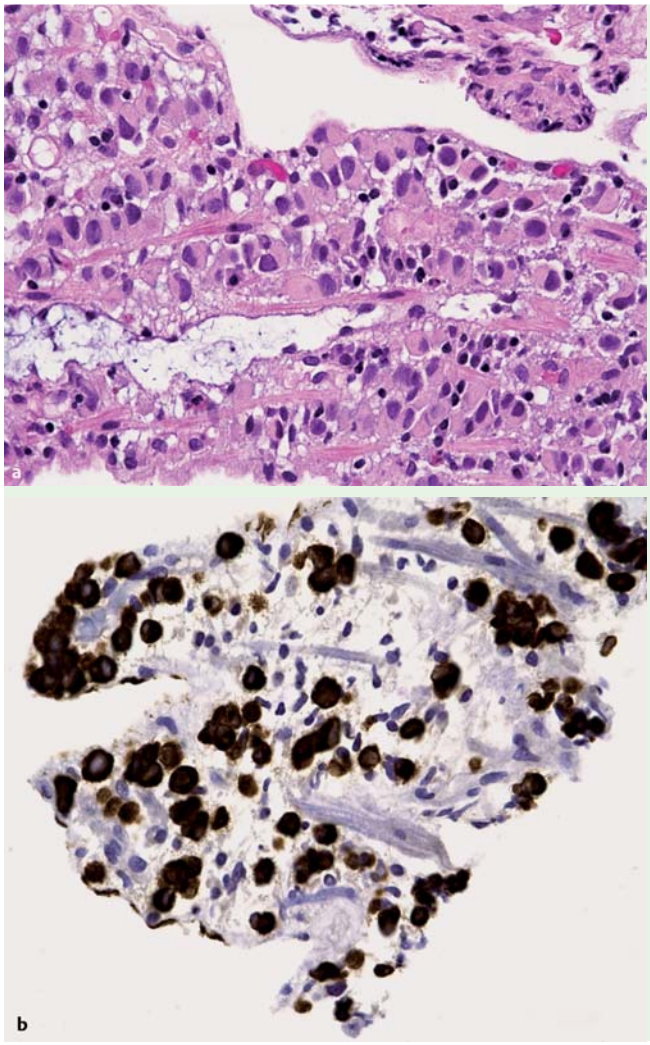

Fig. 2 **a** Prominent infiltrate of individual round, discohesive malignant cells within the lamina propria. **b** Immunohistochemical stains for broad-spectrum cytokeratin (AE1/3) are strongly reactive in the malignant cells.

Case 2: A 66-year-old white woman with stage II invasive ductal adenocarcinoma involving the left breast presented with fatigue, 2 years after the initial diagnosis. A computed tomography (CT) scan of the abdomen at the time revealed a CBD of 1.3 cm. Liver function tests revealed: total bilirubin 10.26 µmol/L, AST 43 IU/L, and ALT 39 IU/L, γ-glutamyl transferase 254 IU/L, and alkaline phosphatase 279 IU/L. ERCP showed an abnormal ampulla with a distal CBD stricture.

At higher power, the glands were irregular with malignant cytologic features, consistent with metastatic carcinoma (**Fig. 3**).

The patient was started on palliative chemotherapy.

A review of the literature revealed one case report of breast cancer metastasis to the ampulla [5]. Both our patients initially had mild prominence of the intrahepatic biliary tree. This was later followed by worsening of liver function and interval progression in the size of the CBD. This emphasizes the need to entertain the possibility of gastrointestinal metastasis from breast cancer at an earlier stage, especially in the presence of other findings suggestive of possible disease recurrence.

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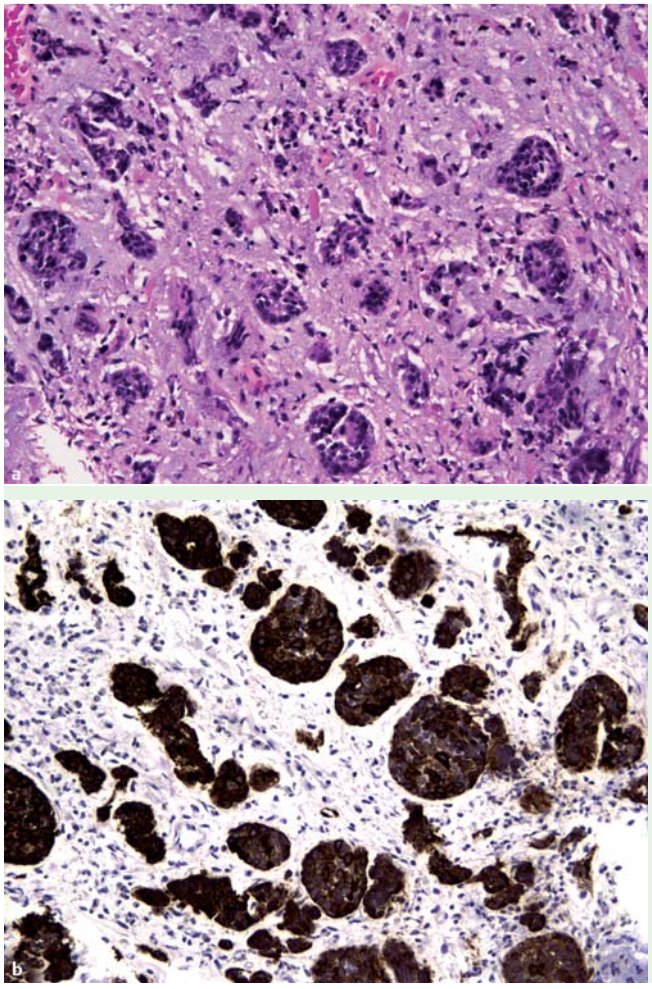

Fig. 3 **a** Irregular glands with malignant cytologic features. **b** The tumor cells are strongly positive for cytokeratin 7.

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