




## Upper GI bleeding as a first symptom of gallbladder cancer

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### *Abstract*

An unusual case of gallbladder cancer with duodenal perforation presenting as massive upper gastrointestinal bleeding is described. A case of diagnosis and treatment of gallbladder cancer is briefly discussed.

**Keywords:** gallbladder cancer, upper gastrointestinal bleeding, cholecystectomy, surgery

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### *Introduction*

Gallbladder cancer is a relatively rare and aggressive cancer [1]. Clinical signs of gallbladder cancer include pain, jaundice, visible tumor in the right hypochondrial region, which are frequently associated with advanced stages of the disease [2]. Early diagnosis is usually made during standard laparoscopic cholecystectomy specimen evaluation or during imaging tests performed on otherwise healthy individuals [3]. Massive bleeding from a cholecysto-duodenal fistula caused by previously undiagnosed gallbladder cancer is an extremely rare occurrence.

### *Case description*

A previously healthy 62-year-old female was admitted with symptoms of gastrointestinal bleeding. After stabilizing the patient, a series of diagnostic tests were performed. Abdominal ultrasound revealed irregularly thickened duodenal pad walls (up to 7 mm), a small gallbladder (about 30 × 8 mm) with a closed lumen, with no visible deposits or gas bubbles in the lumen. A gastroscopy was performed, showing an abnormal tissue mass on the lower wall of the duodenal pad, most likely growing in from the outside, less

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likely a large polyp. Specimens taken showed infiltration of single atypical glandular tubules, and the diagnosis was made more specific using immunohistochemistry, which showed the presence of lesion cells, positive for markers CDX2, CK19, CK20, weakly positive for CK7, GATA3, negative for chromogranin, estrogen, and TTF1 and PAX8. A contrast-enhanced CT in the part adjacent to the bulbous part of the duodenum revealed a thickened wall with visible ulceration, penetrating from the duodenum into the gallbladder. Due to a suspected gallbladder neoplasm with a cholecystoduodenal fistula, an MRCP was performed, which revealed a small gallbladder (10 × 24 mm) with irregular, thickened walls showing communication with the duodenal wall through a 7 mm diameter canal at the border of the pad and descending part – a fistula. The patient was scheduled for laparotomy, during which a cholecystectomy with wedge resection of the liver and partial resection of the duodenum “en bloc” was performed (Fig. 1 and 2). The postoperative course was uneventful and patient was discharged 6 days after surgery.

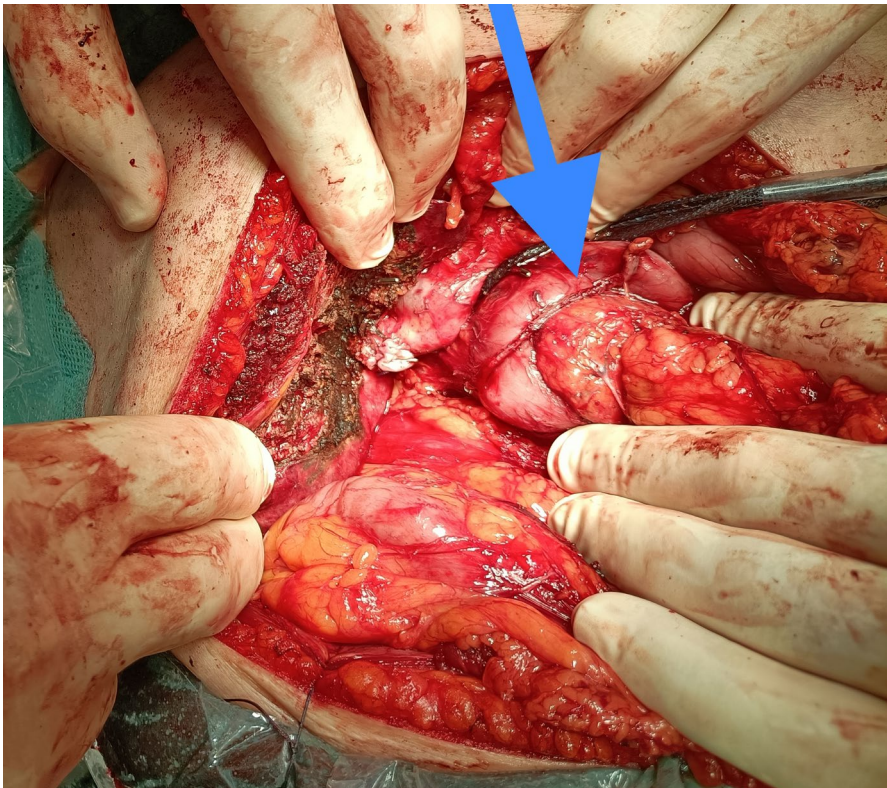


Fig. 1. The operative field after excision of the specimen. The Pringle manoeuvre can be noted as well as the staple line on the duodenal wall. The arrow points to the duodenal staple line. Photo courtesy dr Bogdan Kopacz.



Fig. 2. The specimen with part of the duodenum clearly visible with staple line and liver tissue. The gallbladder is hidden between the duodenal wall and liver wedge. Photo courtesy dr Bogdan Kopacz.

### ***Discussion***

Gallbladder cancer (GBC) is the most common malignant neoplasm of the biliary tract and the sixth most common of the gastrointestinal tract [1,4]. GBC is very aggressive, with a 5-year survival rate of only 19% [5,6]. It affects women disproportionately more than men, which may be associated with women's greater propensity for gallstones [7]. It develops from the mucosa of the gallbladder and its early development is usually asymptomatic, which is why it is usually detected at an advanced stage [8]. Risk factors for gallbladder cancer are old age, with the highest incidence rate reported >75 years of age, female gender [9], obesity, gallstones, gallbladder polyps, porcelain gallbladder [10] (although this has recently been debated [11]), chronic inflammation associated with *Salmonella* and *Helicobacter Pylori* infection, primary sclerosing cholangitis, environmental exposure to heavy metals, cigarette smoking, individual variability of the pancreaticobiliary duct junction, genetic predisposition, poor dietary habits or drinking untreated water [12]. High-resolution ultrasonography remains the diagnostic

standard, but a large proportion of tumors are detected incidentally intra-operatively or during routine pathologic evaluation of a gallbladder resected for gallstones [8]. The most common symptoms of GBC include pain, discomfort in the right upper abdominal quadrant, weight loss, jaundice, palpable tumor, malaise and fever [2,12]. Early detection of GBC increases the likelihood of a complete recovery. Prognostic factors include depth of infiltration, histologic grade, presence of lymph node metastasis, size of liver infiltration, and presence of venous, lymphatic and peri-neural infiltration [13]. Cholecystectomy is the treatment of choice for T1 tumors [14], while T2 tumors require liver wedge resection. In the case of T4 gallbladder cancer, radical resection is rarely achieved. Surgery for metastatic disease is discouraged [3,15]. In the available literature we were not able to find any case of massive gastrointestinal bleeding as a first sign of gallbladder cancer. Interestingly, radical surgery with resection of the liver and part of the duodenum was feasible in our patient, thus making long-term survival possible.

### Conclusion

Locally advanced gallbladder cancer can present as massive gastrointestinal bleeding due to duodenal infiltration.

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