

Gallbladder Adenocarcinoma Associated with Small Cell Tumor (Neuroendocrine), Collision Tumor, A Rare Case in the Literature and Review

Ramos-Fraga Bernardo*, Gamboa Lopez Victor Ramon, Rodriguez Araujo Eduardo and Juan Francisco Tovar Gaucin

Department of Gastrointestinal Surgery, General Hospital of Zone 11, Mexican Institute of Social Security, Nuevo Laredo, Tamaulipas, Mexico

*Corresponding author: Ramos-Fraga Bernardo, Department of Gastrointestinal Surgery, IMSS HGZ 11, Nuevo Laredo, Tamaulipas. C.P. 88000, Mexico, Tel: +4432052468; E-mail: cris_atlas.0909@hotmail.com

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Abstract

Gallbladder cancer is rare, accounting for 0.5% of all cancers in the developing world. Even more so are bile duct collision tumors. We present the case of a 54-year-old female with a histopathological diagnosis of a collision tumor consisting of adenocarcinoma of the gallbladder and small cell neuroendocrine tumor of the gallbladder and bile duct. We review the available literature on collision tumors in general and in the bile duct, their diagnosis and treatment.

Keywords: Collision tumor; Gallbladder adenocarcinoma; Gallbladder neuroendocrine tumor

Introduction

Gallbladder Carcinoma (GBC), the most common malignancy of the biliary tract, is associated with a poor prognosis. The most common histological type of GBC is adenocarcinoma, which accounts for 80% to 97% of GBCs. Other histopathologic variants include the papillary, mucinous, squamous, and adenosquamous subtypes. It is characterized by its absence of symptoms in the initial stage, which generates difficulties in treatment [1-3].

Collision Tumors (CT) are composed of two histologically distinct neoplasms or with minimal mixing between them. They are most commonly found in the skull, lung, gastroesophageal junction, liver, rectum, bladder, and uterus. The pathogenesis of CTs has not been extensively investigated and remains a controversial issue. Some studies indicate that these neoplasms come from a common progenitor cell that then differentiate into two cell types that maintain their own individual characteristics [4].

Another proposed theory is that malignant transformations and changes in the local microenvironment of an original tumor promote the development of a second distinct tumor adjacent to it [5].

Their preoperative diagnosis is usually incidental, since they do not have special radiological or clinical characteristics and the preoperative biopsy often involves only a histological component of the tumor [4,8]. Its incidence is unknown, but more cases

have been diagnosed with advances in imaging studies, greater access to medical care, and the aging of the population. Given its rarity, there are no treatment guidelines and the prognosis is based on the most aggressive type of tumor [6,7].

Case Presentation

54-year-old female, history of vitiligo. She came to our hospital due to the presence of jaundice of two weeks of evolution, pain in the right upper quadrant, colic type, not irradiated. In directed questioning, she reported a weight loss of 10 kg in the last month. Skin and sclera jaundice +++++, semi-globular abdomen at the expense of a soft and depressible adipose panniculus, palpable gallbladder, with positive Murphy and pain in epigastrium.

Laboratories on admission (Table 1) showed a pattern from hyperbilirubinemia to cholestatic. US hepatobiliary gallbladder 10 x 5 cm with a 2.9 mm wall, internal stones and bile sludge, a 4 cm tumor on the head of the pancreas with a 3 cm lymph node conglomerate in the hepatic hilum, intra- and extrahepatic bile duct dilation. CT scan of the abdomen (Figure 1,2 and 3) distended gallbladder, mural thickening of its medial wall associated with the presence of an adjacent 103 mm tumor that extends over the hepatic hilum and the head of the pancreas.

Laparotomy with cholecystectomy was performed, finding gallbladder 15 x 7 cm, in porcelain, 1 cm wall, multiple stones inside. In addition to a biliary crossroads tumor from which a biopsy was taken and sent for histopathological and immunohistochemical study.

Table 1: Laboratories at Admission.

Parameter	Value
Leukocyte	5.2
Neutrophiles	69.1
Erythrocytes	4.5
Hemoglobin	13.6
Platelets	260
Total Bilirubin	8.6
Direct Bilirubin	7
ALT	415
AST	268
Alkaline Phosphatase	306
DHL	389



Figure 1: Abdominal CT, coronal section. A tumor is observed adjacent to the gallbladder extending to the bile duct and head of the pancreas.



Figure 2: A distended gallbladder is observed adjacent to the tumor.

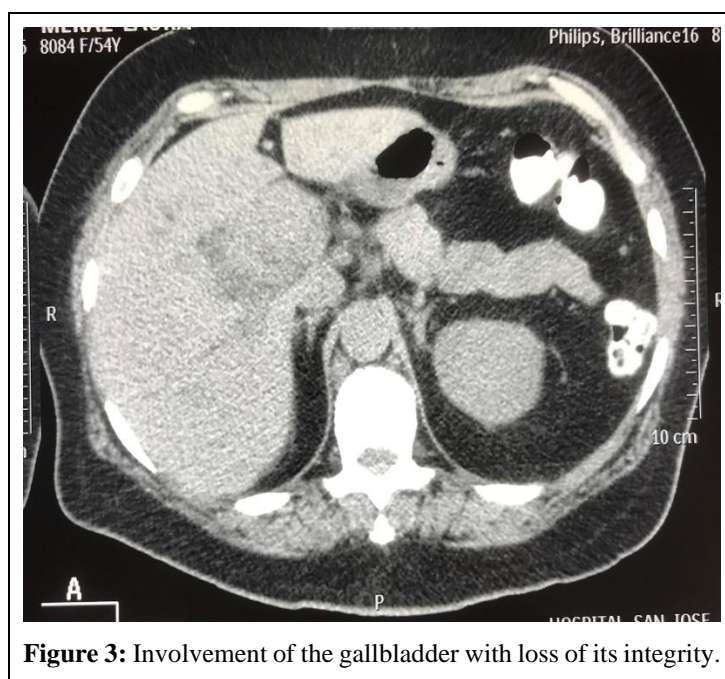


Figure 3: Involvement of the gallbladder with loss of its integrity.

Surgical findings

The clinical case was approached with suspicion of a biliopancreatic crossroads tumor, for which a laparotomy was scheduled plus biopsy, however, given the intraoperative findings and high possibility of presenting neuroendocrine tumor with tension gallbladder and porcelain cholecystectomy was performed open, biopsy and bile duct diversion with T-probe.

Histopathological findings

The histopathological result (Figure 4 and 5) confirmed small cell neuroendocrine carcinoma with infiltration of the gallbladder wall and bile duct, as well as moderately differentiated adenocarcinoma of the gallbladder infiltrating mucosa and muscle wall without rupture of the serosa, confirmed by immunohistochemistry.

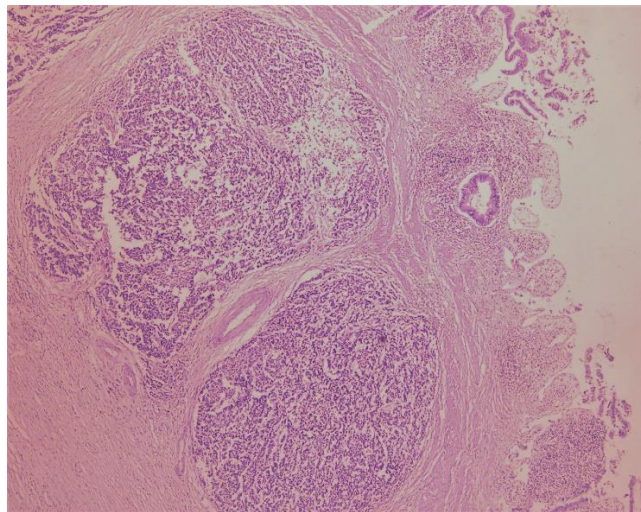


Figure 4: Proliferating cells, lumpy chromatin, small nucleolus, and scant cytoplasm (high-grade malignancy).

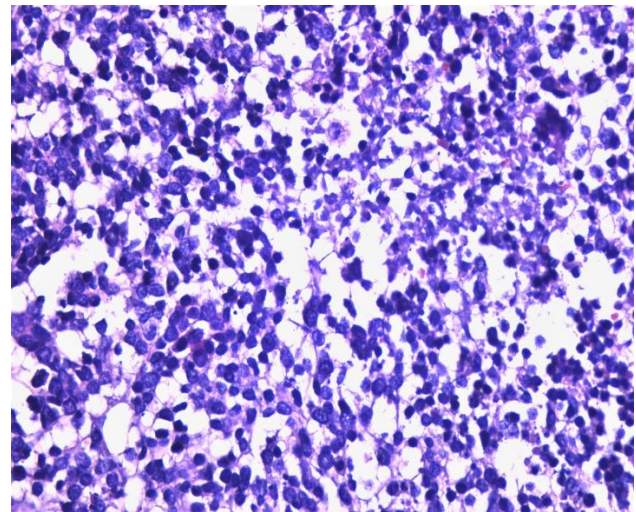


Figure 5: Neuroendocrine tumor with small, round cells that infiltrate the entire thickness of the gallbladder wall and bile duct.

Postoperative course

Sent for adjuvant treatment with somatostatin analog (octreotide) and nucleoside analog (Gemcitabine). The patient was lost after two cycles of chemotherapy, probably passed away.

Discussion

Different terms, including collision tumor, mixed, composite, combined, have been used to describe a tumor consisting of two malignant components [6]. These appear synchronously and are described as two different primary tumors that occur in the same organ, both show malignant characteristics and are not a consequence of metastasis from other locations. These neoplasms are known as collision tumors if the exocrine and endocrine neoplasms occur at the same time within the same organ, but with a different transition zone, as described by Warren et al.

This is in contrast to combined tumors that have mixed exocrine and endocrine neoplasms in the same area without distinction [10,11]. One difficulty in collision tumor is establishing an accurate preoperative diagnosis. Obtaining two malignancies from a single biopsy is like killing two birds with one stone. A definitive diagnosis depends mainly on careful microscopic observation of the surgical specimens, especially with the application of immunohistochemistry [9,12].

The clinical behavior, malignant potential, and associated prognosis of collision tumors are generally related to the most aggressive of collision tumors [13].

In our patient, the clinical findings of progressive jaundice associated with a palpable gallbladder, although slightly painful, known as the Courvoisier-Terrier sign, suggested a biliopancreatic junction tumor; however, intraoperatively, a tumor on the head of pancreas, a bile duct with a hard consistency, hypertrophic at the confluence of the three ducts, also a gallbladder with a hard and hypertrophic consistency wall, with a porcelain appearance, which led to suspect a dual cancer.

The pathological and immunohistochemical findings in this case support the claim that two separate cancers, one originating in the gallbladder and bile duct and one originating in bile ducts, collided with each other and therefore this case can be defined as one. of collision cancers.

Despite the identification of 2 distinct malignant entities, it is difficult to determine whether both occurred synchronously or metachronously at different biopsy locations at the time of diagnosis.

Lessons from other collision tumors within the biliary system have shown a decrease in survival from 2 to 36 months in patients with a pattern of neuroendocrine neoplasia, in contrast collision tumors without a neuroendocrine component have shown a survival of more than 3 years [14,15]. Because of these data, it is critical to recognize collision tumors to determine prognosis and tailor therapy accordingly.

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