

Diagnosis of a duodenal-colonic cyst with inflammatory content derived of a metastatic gallbladder adenocarcinoma: a case report

Diagnóstico de un quiste duodenal-colónico con contenido inflamatorio derivado de un adenocarcinoma de vesícula biliar metastásico: reporte de un caso

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Abstract

The existence of a cystic mass which walls originated from a metastatic gallbladder adenocarcinoma is infrequent. We present the case of 68-year-old male that present to the emergency department with abdominal distention, hyporexia and jaundice. Upon exploratory laparotomy, a duodeno-colonic cyst with walls formed by metastatic cells derived from a Gallbladder Adenocarcinoma. Metastatic disease from a gallbladder adenocarcinoma to transverse colon and duodenum formed adherences between both organs, leading to the formation of cystic mass. Cancer cells have multiple adaptation mechanisms in order to survive harsh environments.

Keywords: Adenocarcinoma. Gallbladder. Cystic mass Case report.

Resumen

La existencia de una masa quística cuyas paredes se originaron a partir de un adenocarcinoma de vesícula biliar metastásico es infrecuente. Presentamos el caso de un varón de 68 años que acude al servicio de urgencias por distensión abdominal, hiporexia e ictericia. Tras laparotomía exploratoria, quiste duodeno-colónico con paredes formadas por células metastásicas derivadas de un Adenocarcinoma de Vesícula Biliar. La enfermedad metastásica de un adenocarcinoma de vesícula biliar a colon transverso y duodeno formó adherencias entre ambos órganos, lo que llevó a la formación de una masa quística. Las células cancerosas tienen múltiples mecanismos de adaptación para sobrevivir en ambientes hostiles.

Palabras clave: Adenocarcinoma. Vesícula biliar. Masa quística. Reporte de caso.

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Introduction

Gallbladder adenocarcinoma (ACVB) is the most common gallbladder neoplasm; has a poor prognosis with a survival rate of less than 5% in 5 years, usually due to its asymptomatic presentation in most cases^{1,2}.

The clinical manifestations are usually difficult to differentiate from a benign disease, due to its nonspecific presentation. For this reason, approximately 40 to 75% of cases usually present symptoms that are diagnosed in advanced stages of the disease.² The symptoms observed in metastatic disease are the product of local invasion of BCAA to nearby structures such as the liver and lymph nodes and manifest as abdominal pain, jaundice, weight loss, and general malaise. Less frequently, the local dissemination of BCAA could spread to the duodenum, manifesting itself with changes in the defecation rhythm³. This is the case of a patient with an atypical presentation of BCAA with metastasis to the duodenum and colon, whose cells formed a cyst.

Case report

A 68-year-old man, a rancher by trade, presented to the emergency department with a 6-week history of illness characterized by abdominal distension, malaise, and vomiting. Within the evolution, oral intolerance associated with hyporexia, asthenia and slight unintentional weight loss also occurred. At the time of diagnosis, the patient also suffered from intermittent diarrhea and constipation. In the last week before admission, there was evidence of slowly progressive jaundice with a sensation of abdominal fullness predominantly in the upper right quadrant. On admission, the physical examination revealed generalized mucocutaneous jaundice. In addition, abdominal distension was evidenced at the level of the right hypochondrium with a focal dullness to percussion of said area. On admission, a hydatid cyst with liver involvement was considered as a diagnosis, for which a blood biochemistry was requested, giving elevated PCR and ESR results, negative tumor markers, elevated total bilirubin, predominantly direct (8 mg/dl), and a cholestatic obstructive pattern.

Contrast-enhanced abdominal CT revealed a hypodense collection at the level of the second portion of the duodenum and the presence of a 12 × 14 cm cystic mass with hypodense content, which compromised the walls of the duodenum and transverse colon (Fig. 1). For this reason, he was admitted to the hepatobiliary surgery service. On the first day after admission, an endoscopy was performed, which showed a narrowing

of the lumen in the second portion of the duodenum with an exophytic mass and a mucosal reaction (Fig. 2). Biopsies of the compromised tissue were taken. Three days after admission, the samples revealed Chronic Granulomatous Histiocytic Duodenitis without signs of malignant infiltration. On the fourth day after admission, a guided ultrasound was performed to drain the intra-abdominal cyst, obtaining almost 1500 cc of exudative, alymphocytic fluid with a gram and a positive culture for *Enterococcus* Durans, thus avoiding the diagnosis of a hydatid cyst. at the beginning, orienting towards an intra-abdominal abscess. Due to this, antibiotic therapy was started on the fifth day of hospitalization, with Gentamicin 420 mg divided every 8 hours and Vancomycin EV 2 g divided every 12 hours for 5 days. During the course of antibiotic treatment, renal function tests were requested that did not show a significant elevation of creatinine or urea. Despite antibiotic therapy for five days, there was no clinical remission, so the patient was scheduled for surgery in order to observe the size of the cystic mass and the surrounding structures involved. During the intervention, widespread abdominal adhesions were found in the upper area, as well as a 1 × 2 cm thickened, hemorrhagic and atrophic gallbladder with a 2 cm diameter and microabscesses within the wall. There was also evidence of a 10 × 8 cm biphasic cystic mass, with a wall thickness of 3 cm, dependent on the second portion of the duodenum, located 3 cm from the ampulla of Vater, compressing it. Grossly, the liver did not show any signs of local extension of disease. This mass also extended to the ascending and transverse colon, infiltrating the serous layer in both portions of the organ (Fig. 3); the mass revealed yellowish seroviscous content, slightly hematic. For this reason, we proceeded to remove it from the abdomen with excision of the compromised walls of the duodenum and colon. Then, the anastomosis of the free ends was carried out; there were no complications. Biopsies and appropriate samples were taken from the procedure.

The postoperative diagnosis was a cystic mass dependent on the transverse colon and duodenum as well as a pathological thickening of the gallbladder to rule out malignancy. Histopathological examination of the submitted samples revealed a moderately differentiated, ulcerated and infiltrating adenocarcinoma of the gallbladder, predominantly superficial in extension with extensive coagulative necrosis of the walls (Fig. 4). The duodeno-colonic cyst had walls composed of metastatic cells from the primary neoplasia. Liver biopsy samples did not show signs of local spread. After fifteen days of hospitalization,



Figure 1. Contrast-enhanced abdominal CT scan: thickening of the gallbladder walls and presence of a cystic mass dependent on the duodenum and colon.

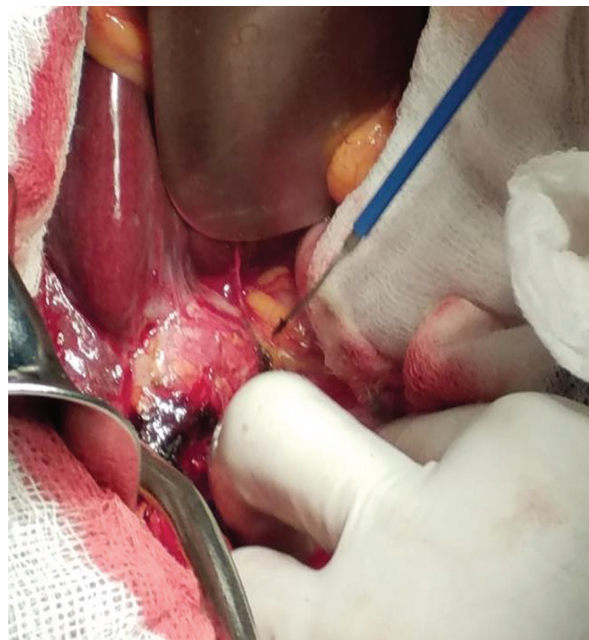


Figure 3. Intraoperative excision of the duodeno-colonic cystic mass.



Figure 2. Endoscopy: presence of an exophytic mass, from the second portion of the duodenum, which demonstrates the reactivity of the mucosa against the chronic inflammatory response.

it was concluded that the tumor grade was T4N4M1 and the patient began palliative care. Despite adequate treatment, the patient died from metastatic disease.

Discussion

This report describes the atypical formation of a cyst dependent on the colon and duodenum, whose walls

are formed by metastatic cells product of a ACVB. ACVB represents the most frequent form of neoplastic proliferation of the gallbladder, however, it is the least common malignant biliary tract neoplasm. Within the risk factors associated with the origin of ACVB, there are usually female sex, advanced age and a history of chronic calculous cholecystitis³.

The clinical manifestations of ACVB are non-specific; the gallbladder wall usually shows dystrophic calcification, which was not observed in the patient. In addition to this, preoperative diagnosis is usually infrequent and sometimes leads to the need to perform intraoperative biopsies to reach the diagnosis, which is appropriately demonstrated in this case.

ACVB metastasis can be local or disseminated. When it is of local extension, due to contiguity, it mainly affects the liver (86%) and adjacent lymph nodes (60%). On the other hand, extrahepatic metastasis, that is, to the colon and duodenum, is very infrequent and manifests, of course, an advanced disease^{4,5,6}. In the present case, both the walls of the duodenum and the colon were adhered to each other due to the metastatic disease of ACVB. In addition, a clear compromise of the serosa of these organs was evidenced, but not of the mucosa, as is common to observe. All this allowed the creation of an optimal environment for the bacterial growth of *Enterococcus Durans*. This fact led to the growth of the cystic mass not dependent on the liver, as shown in the biopsies taken, compressing the ampulla of Vater and

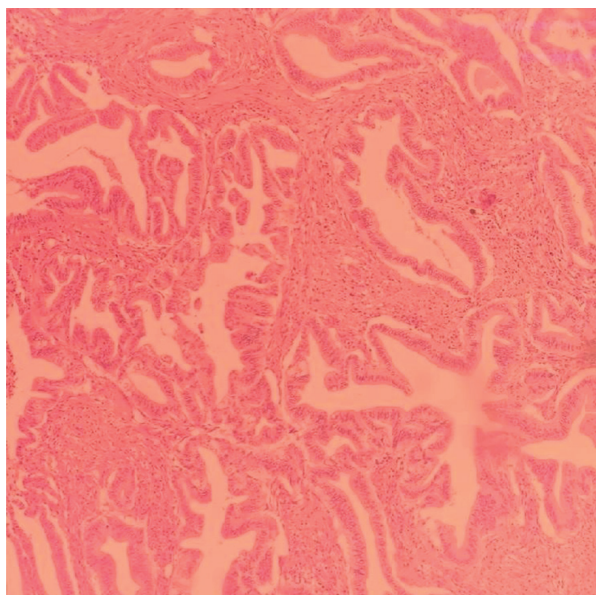


Figure 4. Histopathological findings: Metastatic spread of a moderately differentiated Gallbladder Adenocarcinoma

thereby causing the jaundice in the patient, in addition to changes in the defecation rhythm due to compression of the duodenum and transverse colon. Due to the atypical presentation of the patient's condition and his history, an exploratory laparotomy was performed to determine the diagnosis. In the present case, there was no time in the history of the disease in which the liver showed signs of local expansion of primary disease. In addition, the cystic formation, product of the metastatic disease, could have been a cellular mechanism adaptive to the new environment, which allowed them to proliferate and survive in their new location⁷. On the other hand, the cystic formation and the fluid produced by the adenocarcinoma glands, present in the walls, could have facilitated bacterial translocation of *Enterococcus Durans*, who are particularly present in this portion of the tract, as stated above. These microorganisms usually survive in certain environments within the colonic tract, which allows them to be a reservoir with the capacity for dissemination. In this case, the non-specific presentation of this type of cyst led to ultrasound-guided puncture for drainage and study of the abdominal cystic mass.

Lastly, the presence of coagulative necrosis in the cyst wall suggests that the spontaneous resolution of jaundice was the product of transient atrophy of the cyst due to cell death in the wall of the lesion.

Conclusion

In conclusion, neoplastic cells can adapt to survive in difficult environments and can simulate another disease with associated non-specific symptoms, thus delaying the diagnostic process or diverting it from the underlying disease. As in the case presented, they can simulate an inflammatory cyst or, based on the patient's history, a hydatid cyst, thus misleading the final diagnosis. For this reason, an appropriate medical history must be taken, highlighting the patient's history, and an adequate work plan.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical disclosures

Protection of people and animals. The authors declare that no experiments were carried out on humans or animals for this research.

Data confidentiality. The authors declare that they have followed the protocols of their work center regarding the publication of patient data.

Right to privacy and informed consent. The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

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