

## Unusual Bladder metastasis of a primary cholangiocarcinoma

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### ABSTRACT

Cholangiocarcinomas are rare tumors that develop in the bile duct. Their incidence worldwide is <1 out of 100,000 persons per year. Frequent metastatic sites of biliary cancer are the liver, peritoneum, intra-abdominal lymph nodes, and lungs , however , bladder metastasis was never described in the English literature. Here, we present an exceptional case of a 60 year-old male patient with a history of cholangiocarcinoma treated with surgeries and admitted after 2 years to the emergency with hematuria. The investigations with radiological tomography and cystoscopy with transurethral resection confirms a bladder metastasis of cholangiocarcinoma. Our patient was treated with a bladder hemostatic radiotherapy followed by chemotherapy with cisplatin and gemcitabine (cisplatin at a dose of 30 mg/m<sup>2</sup> and gemcitabine at 1,000 mg/m<sup>2</sup> on days 1 and 8, respectively, every 3 weeks). The prognosis for patients with cholangiocarcinoma is quite.

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### Introduction

Secondary tumors of the urinary bladder are rare, accounting for less than 2% of all bladder neoplasms[1]. Most of the reported cases of secondary bladder tumors are from autopsy studies[1,2]. The most common primary sites include the colon, prostate, rectum , and cervix ; in these cases, the bladder involvement is from a direct extension, especially in advanced stages with peritoneal dissemination. Stomach , skin , lung , and breast are the most common reported sites for distant metastasis[3,4]. Here, we describe an exceptional case in which metastatic cholangiocarcinoma of the bladder

### Case report

A 60-year-old male patient was diagnosed with cholangiocarcinoma localized at the level of the common biliary duct. This tumor was classified as cT3N0M0. A surgical resection was performed.

Two years later, he presented to the emergency with complaints of gross hematuria and abdominal pain of duration of a few weeks. In addition, he also described loss of appetite, fatigue and weight loss approximately 20 kg in 1 year. His ECOG performance status was 1.

Physical examination revealed mild abdominal distention and tenderness in the hypogastric region with deep palpation; there was no defence or rebound.

Laboratory data was remarkable for a total bilirubin 9 mg/dL; alkaline phosphatase (ALP), 333 IU/L; CEA, 3.6 ng/mL; CA19-9, 21 U/mL; and white blood cell count (WBC), 22.9×10<sup>9</sup>/L.

Radiological investigations included a computed tomography scan of the abdomen and chest showed an hypoechoic mass in the bladder, peritoneal involvement and ascite (**figure 1**).

The patient was scheduled for transurethral resection of a solid bladder tumour in our center.

In immunohistochemical analyses, CEA , CK7 and CK20 were positive similar to his history of a primary cholangiocarcinoma (**figure : 2 , 3 and 4**).

These symptoms were found to be associated with recurrence in the bladder and peritoneal. Bladder hemostatic radiotherapy was started followed by chemotherapy with cisplatin and gemcitabine (cisplatin at a dose of 30 mg/m<sup>2</sup> and gemcitabine at 1,000 mg/m<sup>2</sup> on days 1 and 8, respectively, every 3 weeks). A partial response was noted in the radiologic imaging performed after the third cycle and stability after a six cycles.

### Discussion

Cholangiocarcinoma (CCA) is a rare, but lethal cancer arising anywhere from the intrahepatic to the extrahepatic biliary epithelium. It represents about 10% of all primary hepatobiliary malignancies and accounts for approximately 3% of all gastrointestinal cancers, Their incidence worldwide is <1 out of 100,000 persons per year.

CCA is a highly aggressive malignancy and confers a dismal prognosis with majority of patients presenting with advanced unresectable disease. The most common mode of distant spread is via the lymphatics with the lungs, adrenal glands, and brain being the most common extra-hepatobiliary areas of spread. However, metastatic CCA of the bladder is exceptional .

Secondary tumors of the urinary bladder are rare, accounting for less than 2% of all bladder neoplasms . That can be classified into three groups: those which reach the bladder by direct extension from an adjacent organ, metastases, and lymphomas or leukaemias[1].

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Metastatic spread can occur by the conventional lymphogenous or haematogenous routes, or, potentially, by re-implantation of cells exfoliated from tumours higher up the urinary tract[5].

Most of the reported cases of secondary bladder tumors are from autopsy studies[1,2]. The most common primary sites from a direct extension include the colon (21%), prostate (19%), rectum (12%), and cervix (11%) ; however , Stomach (4%), skin (4%), lung (3%), and breast (3%) are the most common reported sites for distant metastasis [3,4].

Bates and Baithun[3] described a large series of 282 tumors metastasis of the bladder but no primary site of cholangiocarcinoma was noted.

A differential diagnosis between primary or secondary bladder adenocarcinoma is difficult , in this situation, evaluation of the clinical history is very important that can avoid diagnostic misinterpretation of biopsy specimens and even unnecessary surgical treatment in patients with secondary bladder tumor.

Cystoscopic evaluation might be helpful for the diagnosis, secondary tumors are almost always solitary and are mostly (54%) located in the bladder neck or trigone region [3].

In practice, knowledge of a history of tumour elsewhere, and comparison with the original histology will establish the secondary nature of a bladder tumour in many cases, particularly as tumours that have spread to the bladder tend to be at an advanced stage. However, the bladder tumour may be the first presentation, [6] and in cases where the histological findings do not clearly identify the tumour as primary, investigation for tumour at other likely sites of origin, particularly the gastrointestinal and female genital tracts, is advisable.

In our case, the clinical history , cystoscopy and histology suggested a diagnosis of bladder metastasis from cholangiocarcinoma.

In metastatic disease, the median survival is approximately 7–12 months. Recent studies have shown prolonged overall survival and progression-free survival with a palliative chemotherapy [7]. The combination of cisplatin and gemcitabine remains the first choice for chemotherapy in palliative situations [8].

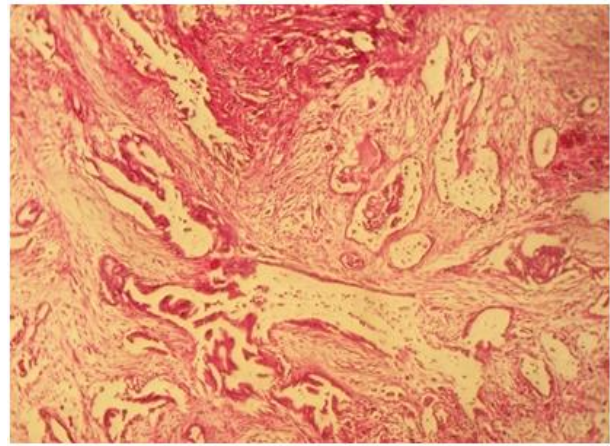
### Conclusion

Cholangiocarcinomas are rare tumors; their metastases into the bladder are exceptional. This study described a patient with bladder metastasis of a cholangiocarcinoma. To our knowledge, this study was the first to describe this type of case. The prognosis for this type of cancer is extremely poor. However, our patient was treated successfully with a combination of gemcitabine cisplatin chemotherapy and hemostatic radiotherapy .

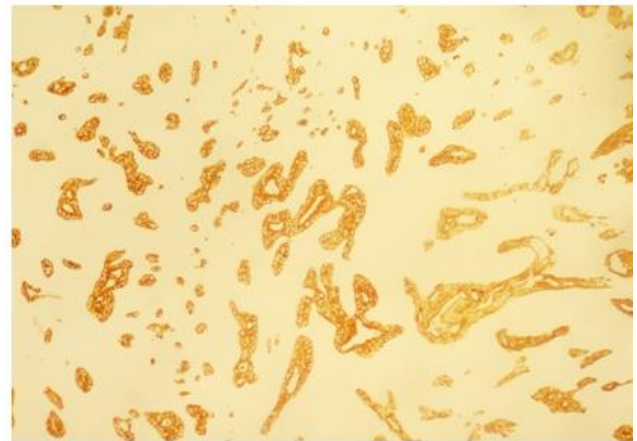
### Figures



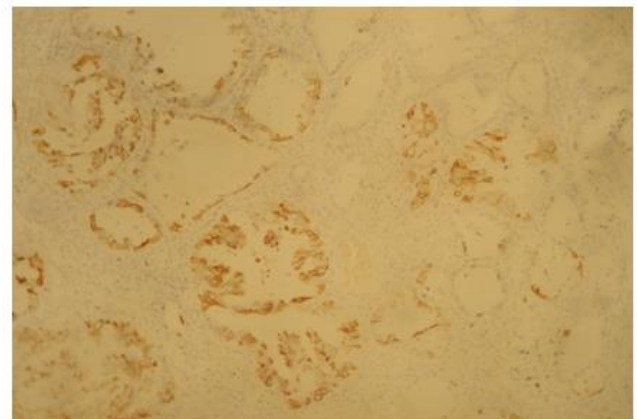
**Figure 1 . computed tomography scan of the abdomen showing an hypoechoic mass in the bladder.**



**Figure 2 . Pathological examination (HEx100): microscopic sections showing adenocarcinoma.**



**Figure 3 . Immunohistochemical staining showing a CK-7 positive.**



**Figure 4 . Immunohistochemical staining showing a CK-20 positive.**

### Competing interests

The authors declare that they have no competing interests.

### Abbreviations

ALP : Alkaline phosphatase  
CEA: Antigène carcino-embryonnaire  
CA19-9: Carbohydrate antigen  
WBC : White blood cell count  
CCA : Cholangiocarcinoma

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