

Oncology

Gallbladder metastasis from renal cell carcinoma: A case report and literature review



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ARTICLE INFO

Keywords:

Renal cell carcinoma
Gallbladder metastasis
Clear cell carcinoma

Introduction

Renal cell carcinoma has a propensity to metastasize to lung, bone, liver, brain, adrenal glands and the contralateral kidney. The proportion of metastatic RCC at diagnosis is estimated to be about 30–40%, and about 20–50% patients will develop metastasis after radical nephrectomy. Gallbladder metastasis from RCC is rare and is found in only about 0.6% of patients at autopsy.¹ We present a case of metachronous metastasis of clear cell carcinoma to the gallbladder in a 55-year-old woman one year after radical nephrectomy.

Case presentation

We present a case of metastasis of RCC to the gallbladder. A 55-year-old woman presented to a general practitioner for microhematuria pointed out at a medical checkup. Ultrasonography at the time showed a left-sided renal mass and gallbladder polyp. She was then referred to our hospital. Enhanced CT revealed an early enhancing tumor in the lower pole of the left kidney. The tumor was 82 mm in diameter, and there was no evidence of distant metastasis. Following consultation with a gastroenterologist, the gallbladder polyp was recommended to be followed as a benign lesion. We performed laparoscopic nephrectomy for the diagnosis of kidney cancer (cT2N0M0). Pathological results were clear cell RCC, pT3a, v1, ly0, G2. Routine examination by abdominal ultrasonography during follow-up showed the gallbladder polyp to be gradually increasing in size. It appeared as an isoechoic homogeneous mass with arterial flow in the neck of the gallbladder

(Fig. 1). Enhanced CT revealed an intraluminal early enhancing mass of 10 mm in diameter in the gallbladder (Fig. 2). Because we could not rule out a malignant tumor of the gallbladder, we performed a laparoscopic cholecystectomy 12 months after the nephrectomy. Macroscopically, the tumor excised from the gallbladder was a pedunculated polypoid mass. Histologically, the polypoid lesion was lined by biliary epithelium and contained clear cells entirely confined to the polyp without involvement of the muscular layer of the gallbladder (Fig. 3). Immunohistochemistry was positive for cytokeratin CAM 5.2, CD10, CD15 and vimentin. The histopathologic characteristics coincided with those of the renal tumor resected one year earlier. The gallbladder tumor proved to be a metastasis from the RCC. Follow-up observation is continuing after surgery, and no recurrence has been recognized at 9 months after the cholecystectomy.

Discussion

Clear cell RCC most commonly metastasizes to the lungs (75%), bones (20%), liver (18%), lymph nodes (11%), and brain (8%). Gallbladder metastasis from RCC is extremely rare, being found in only about 0.6% of cases at autopsy.¹ Metastatic gallbladder tumors are usually derived from melanoma, stomach, pancreas, ovary, small bowel, biliary duct and breast carcinomas.

Ultrasonography is suitable for the initial diagnosis of gallbladder tumor. It is sometimes difficult to distinguish between a metastatic lesion and the primary tumor. The metastatic tumor can be accompanied by a hyperechoic band on the tumor surface, whereas a primary tumor

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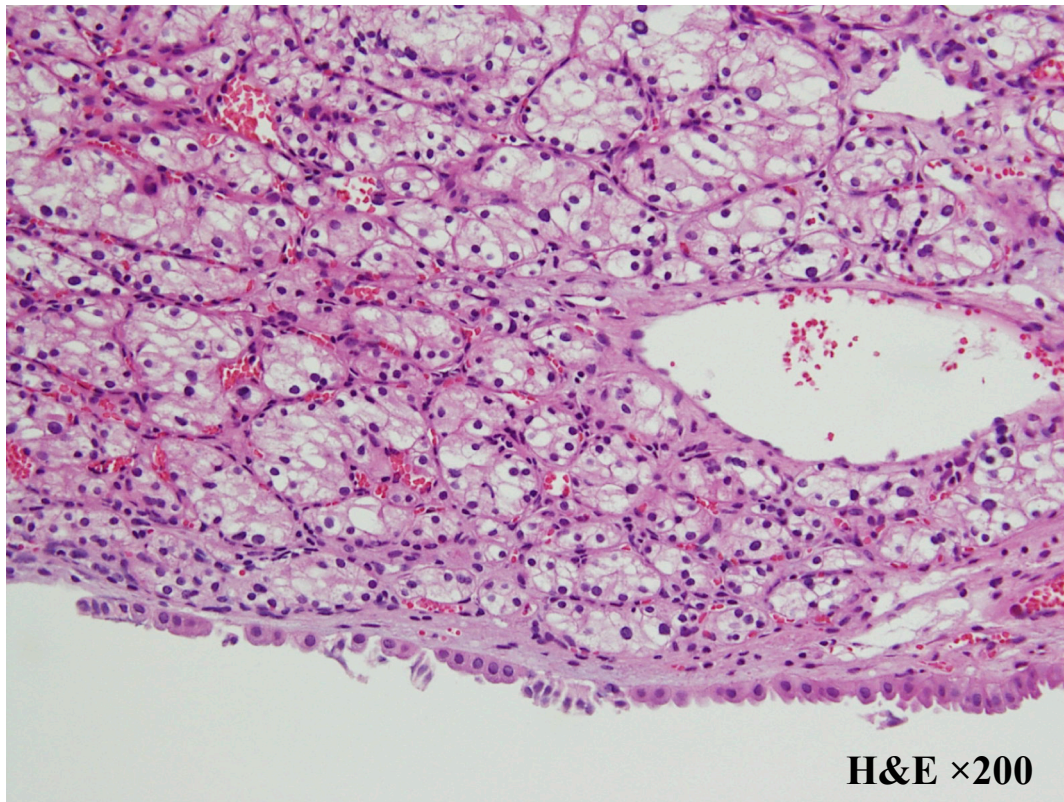


Fig. 3. Histological staining of the gallbladder tumor that was diagnosed as metastasis of clear cell renal cell carcinoma.

to follow the patient by combining several imaging modalities to determine various patterns of metastasis. Early detection and appropriate treatment can contribute to a better prognosis.

Conflicts of interest

None declared.

References

1. Weiss L, Harlos JP, Torhorst J, et al. Metastatic patterns of renal carcinoma: an analysis

of 687 necropsies. *J Canc Res Clin Oncol.* 1988;114(6):605–612.

2. Shyr BU, Chen SC, Shyr YM, Lee RC, Wang SE. Metastatic polyp of the gallbladder from renal cell carcinoma. *BMC Canc.* 2017;17:244.
3. Chung PH, Srinivasan R, Linehan WM, Pinto PA, Bratslavsky G. Renal cell carcinoma with metastases to the gallbladder: four cases from the National Cancer Institute (NCI) and review of the literature. *Urol Oncol.* 2012;30(4):476–481.
4. Castro Ruiz C, Pedrazzoli C, Bonacini S. Gallbladder's clear cell renal carcinoma metastasis: a case report. *Int J Surg Case Rep.* 2016;18:48–51.
5. McWhirter D, den Dulk M, Terlizzo M, Malik HZ, Fenwick SW, Poston GJ. Renal cell carcinoma metastases to gallbladder. *Ann R Coll Surg Engl.* 2013;95 e7–e9.