Metastatic renal cell carcinoma—an unexpected finding after laparoscopic cholecystectomy

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Abstract

Tumours metastasising to the gallbladder from other sites are rare; we aim to present a case of this unusual site of metastasis and give an overview of the current literature surrounding it. A case of renal cell carcinoma (RCC) with gallbladder metastasis is presented, along with a brief summary of the literature.

A 55-year-old female presented with symptoms due to a large right RCC. Staging investigations were negative for metastasis and she underwent curative resection. She presented 8 years later with cholecystitis, and histological examination of the gallbladder specimen identified metastatic renal cell carcinoma which was not identified on preoperative imaging.

RCC metastases to the gallbladder are unusual, but probably more common than recognised. They're frequently not identified preoperatively, and prognosis is similar to isolated metastases to other organs.

Tumours metastasising to the gallbladder from other sites are rare, and frequently not identified during preoperative imaging. We present an unusual case of renal cell carcinoma (RCC), discovered years later during an unrelated laparoscopic cholecystectomy.

Case report

A 55-year-old female with a history of bariatric surgery presented in 2005 with a 6-week history of intermittent macroscopic haematuria and right-side abdominal pain.

A computed tomography (CT) scan revealed an isolated right RCC measuring 11.1x10.9x9.8 cm. She underwent an elective open radical right nephrectomy from which she recovered with no incident. The histopathology of the specimen confirmed a completely excised RCC of clear cell type with invasion of the distal renal vein but no lymph node involvement. She did not receive any adjuvant therapy and was subsequently discharged back to the care of her general practitioner.

She re-presented in September 2013 with acute epigastric pain. An ultrasound scan (US) demonstrated cholelithiasis, gallbladder wall thickening, and pericholecystic fluid consistent with acute cholecystitis. No polyp was described at this time. Her biliary tree was dilated and subsequent magnetic resonance cholangiopancreatography (MRCP) confirmed choledocholithiasis. She had successful duct clearance during endoscopic retrograde cholangiopancreatography (ERCP) and went forward for acute laparoscopic cholecystectomy, at which the gallbladder appeared inflamed, but otherwise unremarkable.

Upon opening the gallbladder an irregular 2.7x1.8x1.4 cm polyp was noted.
The histopathology of the gallbladder specimen revealed underlying changes of chronic cholecystitis. Surprisingly the incidental nodule was identified as metastatic RCC of the same type as in 2005.

CT staging was immediately performed which demonstrated multiple small pulmonary metastases measuring up to 6 mm but no further abdominal metastases. She was commenced on sunitinib (a tyrosine kinase inhibitor) with good response. Restaging CT 5 months after diagnosis showed involution of pulmonary nodules, the largest being 2 mm.

**Discussion**

Here we report an unusual finding of a RCC metastasis found incidentally in a gallbladder specimen several years after a complete resection. Tumours metastasizing to the gallbladder are extremely rare and appear to arise from a variety of primary sites that include not only the kidney but also breast, gastrointestinal tract and cutaneous melanoma.

There are less than 50 cases of RCC with metastasis to the gallbladder described in the international literature yet the true incidence may be surmised from large autopsy series that have found RCC metastases in the gallbladders of 0.6% of cases.

Although gallbladder metastases are uncommon it is not surprising that RCC can act in this strange way.

As many as 40% of patients diagnosed with RCC will have regional or distant metastases at time of presentation and nearly half will develop metachronous metastases after excision of the primary lesion.

Although the most common sites of metastasis are lung, bone, liver and brain most clinicians treating RCC can describe extraordinary sites of new-found disease. As far as the authors are aware, however, this is the first case of RCC metastasising to the gallbladder published in New Zealand.

A recent review by Chung et al. analysed 33 patients diagnosed with histologically proven RCC metastasis of the gallbladder. As in this current case these are most commonly of the clear cell type (at least 85%) and usually present as metachronous lesions (67% of patients). The median time between nephrectomy and diagnosis of the metachronous gallbladder metastasis was 4.0 years (range 0.2–27 years) and in 39% of patients the gallbladder was the only site of metastasis.

A surprising finding in this review was that 45% of gallbladder metastases were not identified by preoperative imaging despite a median size of 3.0cm (range 1.1–7.5cm). The prognosis appeared similar to resection of isolated RCC metastases from other organs with overall survival of 68% and recurrence-free survival of 54% at a median time of 1.5 year post-cholecystectomy.

In summary, metastatic RCC tumours of the gallbladder are rare, and frequently not identified on preoperative imaging. The prognosis is not certain but appears to depend on the primary tumour type and extent of disseminated disease rather than the finding of RCC in the gallbladder.

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