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Case Report

Gallbladder metastasis from primary renal malignancy: case report and review

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ABSTRACT

Gallbladder metastases are rare, that too from a renal malignancy are further rare. Renal cell carcinoma (RCC) accounts for 3% of adult malignancies and >30% of cases are already metastatic by the time of presentation. Neither gallbladder is a usual site for RCC to metastasize nor is clear cell RCC common in gallbladder secondaries. We report one such case of a 50-year-old man who was incidentally diagnosed to have left sided renal cell carcinoma and developed gallbladder and lung metastases detected in follow-up imaging. Patient underwent radical nephrectomy followed by extended cholecystectomy later on. And presently is receiving targeted therapy for pulmonary metastases.

Keywords: Gallbladder, Metastatic, Renal cell carcinoma, Synchronous

INTRODUCTION

Renal cell carcinoma (RCC) accounts for 3% of adult malignancies majority of which (>50%) are diagnosed incidentally by cross-sectional imaging. Clear cell variant is the most common histologic subtype while others include papillary, chromophobe, oncocytoma and collecting duct variants. Approximately 30% of the cases are already metastatic at presentation. The usual sites being lung, bone, liver and adrenals.[1] However metastatic involvement of gall bladder is very unusual with only few case reports and case series available in literature.

Primary gallbladder carcinoma accounts for 2-4% of gastrointestinal malignancies. Gallbladder secondaries are rarer and more unusual. Malignant melanoma, carcinomas of lung, oesophagus, stomach, pancreas and colonic malignancies are proven to metastasize to Gallbladder sometimes.[2] RCC metastasizing to gallbladder is documented in a very few cases and there is a need to lay down adequate measures for early diagnosis and prompt treatment of such cases. We reported one such case of clear cell variant- renal cell carcinoma with gallbladder metastasis to add to the literature another rare entity.

CASE REPORT

A 50-year gentleman came with complaints of right upper abdominal pain and fever. Murphy's sign was positive. Ultrasonography (USG) abdomen confirmed the diagnosis of acute calculus cholecystitis and an incidental finding of a left sided renal mass. Cholecystitis was managed conservatively. A CECT abdomen was done for evaluating the renal mass which showed a 10×10 cm heterogeneously enhancing soft tissue mass arising from upper and middle poles of left kidney along with cholelithiasis and a normal common bile duct (CBD). Patient was planned for left sided nephrectomy, after confirming adequate right renal function. Meanwhile he developed cholangitis and magnetic resonance cholangiopancreatography (MRCP) showed choledocholithiasis and gallbladder sludge for which he underwent endoscopic retrograde

cholangiopancreatography (ERCP) stone removal and stenting. It was after complete recovery and ruling out metastasis, patient underwent left sided laparoscopic radical nephrectomy for stage 2 RCC. Intra- and post-operative course was uneventful. Histopathological examination reported pT2NxMx clear cell type RCC.

After a month post-operatively, patient had another episode of cholangitis. MRCP done this time showed an intraluminal enhancing polypoidal lesion (5×3×3 cm) with internal vascularity in the gallbladder with CBD stent in situ. In view of suspected CBD stent blockage being the cause of cholangitis, patient underwent ERCP with parallel stenting. As the MRCP suggested a likely neoplastic lesion of gallbladder, another CECT abdomen with chest was done which supported the probability of neoplastic aetiology of the gallbladder lesion (Figure 1). It also showed multiple pulmonary nodules likely metastatic. Thus, a positron emission tomography- computed tomography (PET-CT) scan was done which documented-mildly metabolically active, well defined polypoidal soft tissue lesion in gallbladder with multiple bilateral pleural and parenchymal based lung nodules confirming the neoplastic aetiology. CT guided biopsy of lung lesions was unsuccessful due to the small size. Gallbladder lesion being resectable, elective R0 resection was planned, so as to confirm the histopathological type of the lesion and to plan further systemic therapy. Subsequently with possibility of having primary gall bladder malignancy verses metastatic gall bladder lesion which is less known, the patient underwent open extended cholecystectomy. Post-operatively patient developed bilateral pleural effusion which was managed by intercostal drain placement and the pleural fluid obtained was negative for malignant cells. Targeted therapy is started after his discharge, for the lung metastasis.

As a histopathological surprise, the report turns out to be metastatic clear cell carcinoma confirming the origin of tumour as RCC (Figure 2).

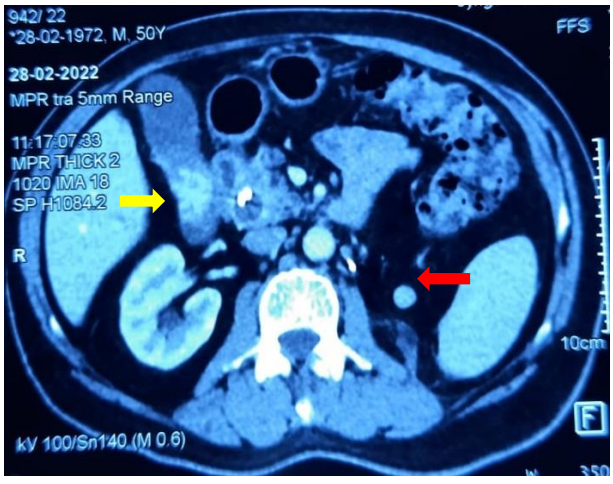

Figure 1: CECT abdomen showing polypoidal enhancing lesion in gallbladder (yellow arrow) and an empty left renal fossa (red arrow).

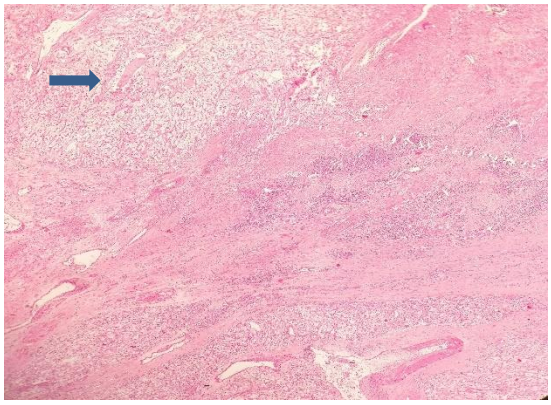

Figure 2: Histopathological slide with clear cell picture (blue arrow) showing invasion into muscle wall of gallbladder (right lower part of the slide).

DISCUSSION

There are not more studies on gallbladder metastasis from a renal malignancy and the data available is very less. Our patient is a 50-year-old gentleman. Literature suggest that mean age of presentation is 62-years with male preponderance unlike the primary gallbladder malignancies which show a female preponderance.[3] Usually, gallbladder metastasis is asymptomatic and are detected incidentally during follow-up. Sometimes patients may present with cholecystitis or cholangitis as in our case. Gallbladder secondaries are less associated with gallstones.[4] This low association explains the silent clinical presentation.[4]

Literature says that the time of presentation of gallbladder metastasis after the diagnosis of RCC varies from months to years. The tumours detected within 6 months of diagnosis of primary malignancy are called synchronous lesions/tumours and those detected after 6 months of diagnosing the primary are called metachronous lesions/tumours. Metachronous gallbladder metastasis are more common (67%) than synchronous metastasis (33%).[3] Clear cell carcinoma is the most commonly found histological variant in gallbladder metastasis, but recently this is being co-related with the clear cell type RCC having the highest incidence compared to other variants.[4,5]

As most of the cases are asymptomatic a high degree of suspicion is needed in diagnosing gallbladder metastasis. A thorough history and examination along with a radiological imaging like USG, CT or an MRI of abdomen is always advised. MRI has a greater sensitivity in identifying early gallbladder lesions when compared to CT and USG. As discussed earlier 67% of gallbladder metastasis are metachronous and majority being asymptomatic, follow-up imaging is our best option to diagnose the disease in early stage. Routine imaging showed a hyper-vascular polypoid mass with a narrow stalk in most of the metastatic lesions compared to persistently enhancing irregularly thickened walls or infiltrating lesions of primary gallbladder pathologies.[6]

Haematological investigations have minimal role in diagnosis or prognosis of the condition. Tumour markers (CA19-9), if elevated, can support the suspicion of malignancy.

Gallbladder metastasis from RCC does not necessarily indicate a poor outcome, and cholecystectomy is advised whenever possible. Decision of simple or extended cholecystectomy depends on the T stage of the gallbladder lesion, as R0 resection is more important. Castro Ruiz et al also reported that cholecystectomy with R0 resection was shown to be the only factor that increases survival.[7] Surgical treatment should be considered as primary treatment when the metastatic lesion is solitary and resectable. Shyr et al showed that the median survival time of the patients undergoing cholecystectomy for gallbladder metastasis from RCC was 26.5 months, with 1-year survival of 91.5% and 5-year survival of 59.3%.[4] Among the cases of gallbladder metastasis, acute cholecystitis as a clinical presentation is thought to be associated with a poor prognosis and solitary metastasis is associated with favourable prognosis.[8] Recent studies in medical oncology demonstrated the efficacy of targeted therapy over immunotherapy. Previously interferon therapy was given but it resulted in only a modest response without any survival benefit. The side-effects of interferon therapy were also more. Targeted therapy with VEGFR and PDGFR inhibitors, mTOR inhibitors is getting popularity due to improvement in both median overall survival and progression free survival.[9] Drugs like sunitinib, sorafenib, bevacizumab or temsirolimus have become the first line agents in metastatic RCC.

By this case report, our emphasis is that the gallbladder metastasis being rare, we should be extra cautious and vigilant in facing such situations. As the literature suggests, any polypoid lesion in gallbladder in a diagnosed RCC patient a differential diagnosis of secondaries in gallbladder should be kept in mind. Strict follow-up with radiological imaging is the key to diagnose the condition in early stages. In all operable gallbladder lesions offering surgery is the key to better outcomes.

CONCLUSION

Renal cell carcinoma metastasizing to gallbladder is a very rare occurrence. High level of suspicion and a strict follow-up are key to early detection of gallbladder secondaries. Gallbladder secondaries are operable and have favourable prognosis if R0 resection is achieved.

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