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Surgery

Primary Renal Squamous Cell Carcinoma

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Abstract **Case Report**

Primary renal squamous cell carcinoma (SCC) is a rare neoplasm. It is commonly associated with long standing stone disease. The diagnosis is usually unexpected and commonly diagnosed late. The tumor is aggressive and has poor prognosis. We report a case of primary renal SCC in a 50 year old man.

Keywords: Primary renal squamous cell carcinoma (SCC), stone disease, diagnosis, Radical surgery.

INTRODUCTION

Primary renal SCC accounts for less than 1% of all renal malignancies [1]. The diagnosis is challenging and is usually confused with inflammation process with a background of stone disease. Radical surgery is standard of care with limited benefits of alternative treatments. Outcome is poor due to its natural aggressive behavior [2].

CASE REPORT

A 50 year old man was diagnosed to have a left pelvi-ureteric junction stone with nephrolithiasis in 2016. He has history of passing out stones in the urine since 2007 but never sought treatment. He refused treatment during that admission. In 2020 he presented again with left loin pain and fever associated with haematuria. Ultrasound was done that had features suggestive of xanthogranulomatous pyelonephritis. Further imaging done with computed topography (CT) revealed a left renal mass with regional enlarged necrotic nodes with a background of left staghorn calculi (Fig 1, 2).

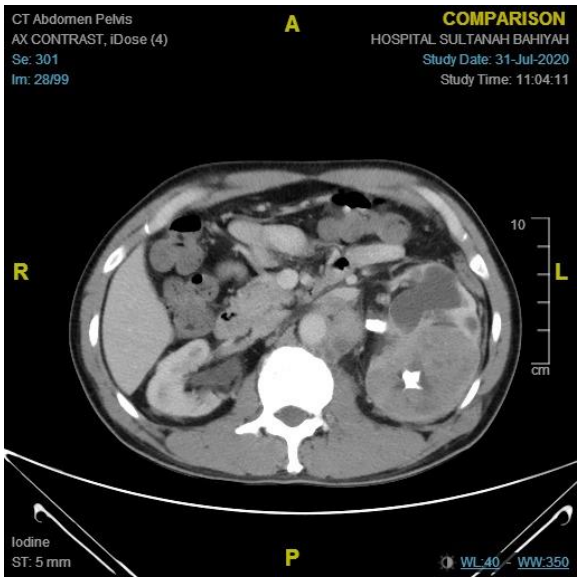

Fig 1

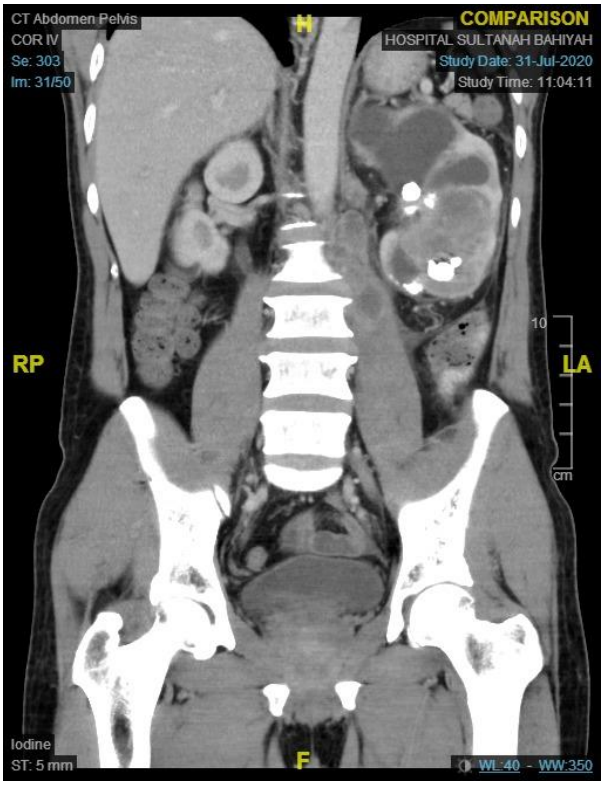

Fig 2

Renal biopsy histopathology came back as squamous cell carcinoma. Another CT scan was done 1 month later that showed enlarging para-aortic nodes with extensive local infiltration to the left psoas muscle and erosion of L2 vetebrae (Fig 3, 4).

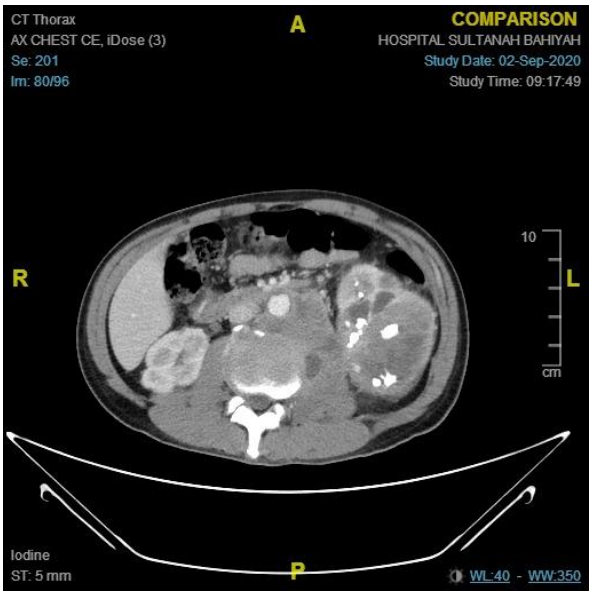

Fig 3

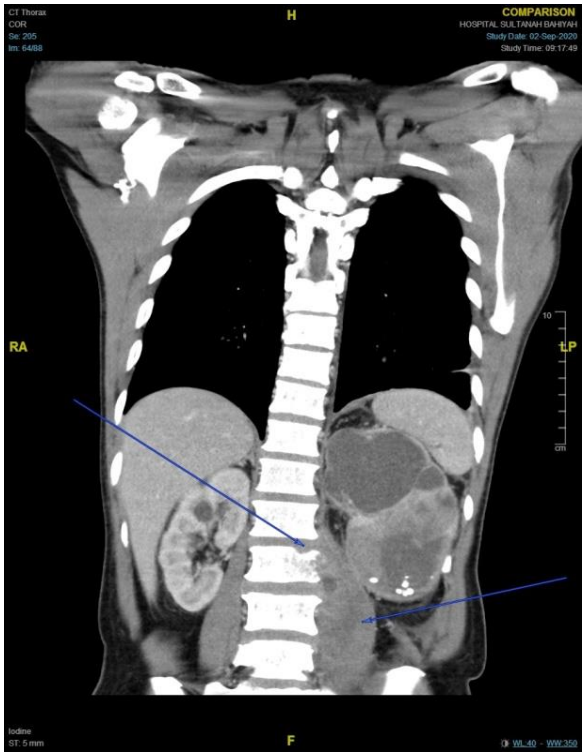

Fig 4

Due to his poor functional status and the extent of the tumor, the patient was sent for palliative care management.

DISCUSSION

Primary renal squamous cell carcinoma is extremely rare that accounts for less than 1% renal malignancies [1]. Squamous cell carcinoma is a dysplastic progression after squamous metaplasia that occurs in the collecting system. Chronic inflammation, infection or irritation is the main factor for this type of neoplasm to occur. Stone disease becoming the most common risk factor followed by other factors such as chronic infection, previous radiation, and vitamin A deficiency [3].

Presenting complaints will generally be dull aching loin pain associated with haematuria. They may also present with paraneoplastic fever and leucocytosis due to the increase cytokine release and systemic inflammatory response. The suspicion of renal SCC should be higher especially in patients' that has a background history of renal disease.

Radiologically, primary renal SCC may appear as a solid renal mass with hydronephrosis and calcifications. The features may be confused with the appearance of Xanthogranulomatous pyelonephritis (XGP). XGP is a chronic form of pyelonephritis, typically associated with stone disease that causes hydronephrosis and destruction of renal parenchyma. The radiological features of primary renal SCC may not be distinguished XGP or other renal neoplasm. The non specificity of the presentation or the imaging may cause confusion in the diagnosis and histopathology is required for confirmation [4].

Majority of primary renal SCC presents in an advanced stage [2]. The prognosis is poor, and most of the tumors have been reported as high grade with 84% locally advanced of metastatic [5]. Nativ *et al*., reported 1 and 2 year survival rates of locally invasive renal SCC to be 33% and 22%, respectively. 5-year survival is under 10%, and most patients die within one year of surgery [2].

Radical surgery is the mainstay treatment. Nephrectomy is still indicated despite distant metastasis to control local symptoms. Palliative chemotherapy consisting of Cisplatin based regimen adds no survival benefit [6]. Survival is dismal despite treatment due to the advanced presenting stage.

CONCLUSION

Primary renal SCC is a rare tumor that has a strong association with stone disease. Since the presentation is vague and diagnostic imaging may be inconclusive, a high index of suspicion must be applied. A more liberal biopsy strategy may be adapted to achieve early diagnosis. There are no established guidelines and management is case by case.

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