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Renal cell carcinoma with concomitant solid pseudopapillary tumor of the pancreas: A case report

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ABSTRACT

INTRODUCTION: Solid pseudopapillary tumor (SPT) of pancreas is an unusual low-grade malignant epithelial tumor that usually occurs in young women and can be treated with surgical resection. Renal cell carcinoma (RCC) is the most common solid lesion of the kidney and primarily a disease of the elderly patient.
PRESENTATION OF CASE: In this article we present a case of RCC with concomitant SPT of the pancreas who was treated successfully with a radical nephrectomy and distal pancreatectomy.
DISCUSSION: RCC with concomitant SPT may associated in β-catenin gene mutation. But no prior reports have described RCC with concomitant SPT of the pancreas in the same patient.
CONCLUSION: To the best of our knowledge, this is the first report of RCC with concomitant SPT of the pancreas in the same patient.

1. Introduction

Renal cell carcinoma (RCC) represents 2–3% of all adult cancers, is the most common solid lesion of the kidney, with typical presentation in the sixth and seventh decades of life.[1,2]

Solid pseudopapillary tumor (SPT) of pancreas is rare neoplasm, comprising approximately 1–2% of all exocrine pancreatic tumors with low malignant potential.[3,4] There is a strong female preponderance, and most cases present in the third and fourth decade of life. SPT typically presents with non-specific symptoms of abdominal pain and/or a palpable abdominal mass. The usual treatment is surgical resection; after resection, the prognosis is generally favorable.[5] In this article we present a case of RCC with concomitant SPT of the pancreas in a 53-year old Turkish women who underwent a successful radical nephrectomy with distal pancreatectomy. According to our knowledge this is the first case which have RCC with concomitant SPT of the pancreas.

2. Presentation of case

A 53-year old Turkish women with nonspecific abdominal pain was admitted to our hospital. She underwent an abdominal ultrasound and 4 cm × 4.5 cm in size solid mass in the right kidney was detected. A dynamic computed tomography was performed subsequently and showed enhancing solid mass in the right kidney which in size 4.3 cm × 4 cm and solid-cystic mass in the tail of the pancreas which slight heterogeneous enhancing in portal venous phase and surrounding the splenic vessels (Figs. 1 and 2). The patient underwent right laparascopic radical nephrectomy and distal pancreatectomy. After transperitoneal laparascopic nephrectomy the position of the patient was changed to supine position. The surgical team started the operation with four transperitoneally located abdominal ports, but near the end of the operation due to an abundant bleeding which was uncontrolled laparoscopically the operation was shifted to open procedure and distal pancreatectomy was executed with open surgical procedure. Additionally, during the operation it was detected that the splenic vessels were surrounded by pancreatic mass. Therefore splenectomy was performed. Pathology of the renal mass was Fuhrman nuclear grade 1 renal cell carcinoma limited to the kidney. On gross pathology, the pancreatic tumor was 4 cm in maximum diameter that invaded splenic hilus and including solid and cystic components (Fig. 3). Microscopically, the solid areas consisted of uniform polyedral eosinophilic cells arranged around delicate fibrovascular stalks. Rare mitotic figures and localized necrotic areas were also determined. Immunohistochemical analysis was positive for vimentin, CD56, beta-catenin, and cyclin-D1 (Fig. 4).

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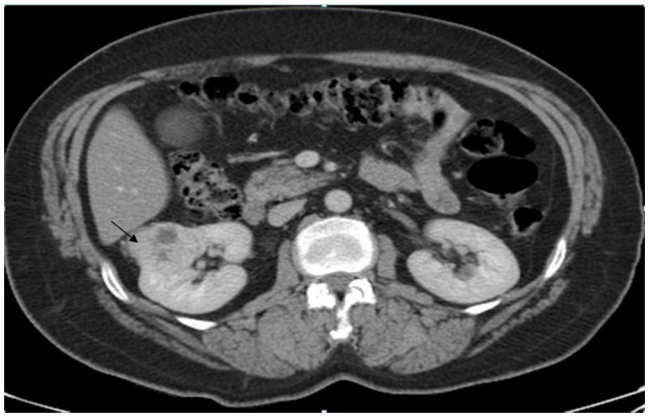

Fig. 1. CT image of enhancing solid mass in the right kidney (black arrow).

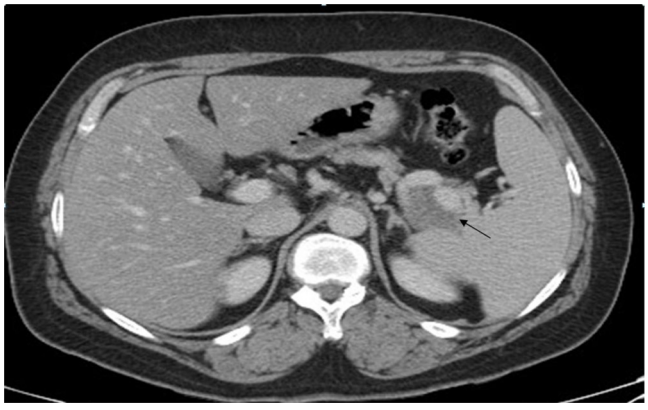

Fig. 2. CT image of solid-cystic mass in the tail of the pancreas (black arrow).

Postoperative course was unremarkable and patient was discharged on post-operative day 7 in good condition.

3. Discussion

SPT of the pancreas constitutes a distinctive and relatively uncommon clinicopathologic entity. It was first described by Frantz in 1959 and was defined by the World Health Organization (WHO) in 1996 as "solid pseudopapillary tumors" of the pancreas. Increased use of advanced radiological techniques has led to increased prevalence of SPT in recent years.[3,4,6] The vast majority of cases are within the range 20–40 years old and less than 10% of the tumors occur in patients older than 40 years.[7] Our patient is 53-year old as old as SPT of the pancreas is rarely seen in. Clinically, SPT may present as an abdominal mass with discomfort or pain, or almost 30% of the SPT may be an incidental finding in work up for unrelated conditions.[8] The symptomatic tumors are generally large and approximately 64% arise in the body and tail of the pancreas.[9] Radiologic imaging is an essential part of the diagnosis of pancreatic SPT. In CT scan SPT demonstrate no enhancement of the cystic portions but slight enhancement of the solid portions in the arterial phase and marked enhancement in the portal venous phase.[10] The tumor may involve any portion of the pancreas but the head and tail are most common.[5,11] Although the malignant potential of SPT is low, up to 15% of SPT patients develop metastasis. The most common sites of metastasis are the liver, regional lymph nodes, mesentery, omentum, and peritoneum.[12] Angioinvasion, perineural invasion and deep invasion of pancreatic tissue characterize malignancy.[13] In our case we have seen that splenic artery and vein was invaded by SPT of pancreas.

SPT is characterized by the presence of activating β-catenin gene mutations that interfere with phosphorylation of the protein product.[14] Though β-catenin-activating point mutations are rare in RCC,[15] elevation of β-catenin levels by induced overexpression induces renal tumors in mice.[16] RCC with concomitant SPT may associated in β-catenin gene mutation. But no prior reports have described RCC with concomitant SPT of the pancreas in the same patient.

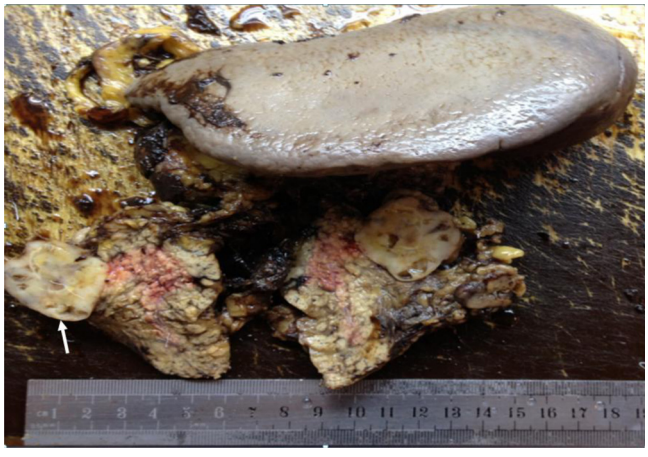

Fig. 3. Macroscpic view of a solid-cystic tumor in the tail of the pancreas (white arrow).

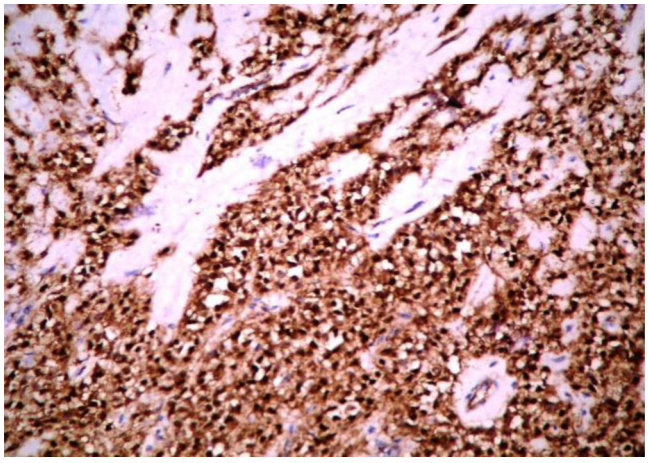

Fig. 4. microscopic view of beta-catenin positivity in SPT cells (DAB, 20×).

4. Conclusion

To the best of our knowledge, this is the first report of RCC with concomitant SPT of the pancreas in the same patient. Distal pancreatectomy may be curative treatment for SPTs which located in the tail of the pancreas.

Conflict of interest

None.

Funding

None.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author's contributions

All authors have contributed to patient care, writing and editing of the manuscript. Dogan Atilgan performing radical nephrectomy, acquisition of data, analysis and interpretation of data, drafting the article and revising it critically for final approval of the version to be submitted. Sahin Kilic assisting radical nephrectomy and distal pancreatectomy, acquisition of data, analysis and interpretation of data, drafting the article and revising it critically for final approval of the version to be submitted. Huseyin Ayhan Kayaoglu performing distal pancreatectomy, acquisition of data, analysis and interpretation of data, drafting the article and revising it critically for final approval of the version to be submitted. Resid Dogan Koseoglu pathological examination, acquisition of data, analysis and interpretation of data, drafting the article and revising it critically for final approval of the version to be submitted.

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