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Oncology

Pleomorphic undifferentiated sarcoma: A case of a giant renal mass

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1. Introduction

Renal cell cancers are the most prevalent type of malign renal masses. Sarcomas are one of the rarest subtypes. Primary renal sarcomas make up 1–3% of all renal malign masses. Previously known as malign fibrosis histiocytoma (MFH), pleomorphic undifferentiated sarcoma (PUS) is the most prevalent soft tissue tumor in adults, with a 20% occurrence rate. PUS has a histologically wide range, the most prevalent forms being storiform and mixed form including pleomorphic areas. These tumors usually originate from renal parenchyma, and rarely from renal capsule.[1] We present the diagnostic, therapeutic and pathological characteristics of a case of a giant renal PUS.

2. Case

83 year-old female patient applied to our clinic with nonspecific complaints such as abdominal pain, abdominal distention, loss of appetite, and weight loss. Abdomen was observed to be distended during physical examination. IV-contrasted full abdominal CT revealed a giant mass with 30 × 30 × 18 cm diameter, originating from the left kidney, pushing the kidney and the rest of the abdominal organs to the opposite side of the midline (Fig. 1).

The mass was heterogeneous, and neither necrosis nor calcification was observed, which increased the possibility of malignancy. Full body bone scintigraphy, Torax CT, and PET-CT were conducted for preoperative metastasis scans. There were not any metastasis observed in these tests. The patient was operated with radical nephrectomy, merging a supra-umbilical vertical midline and a left anterior subcostal incision. Left radical nephrectomy material weighted 7 kg, and was of a 30 × 28 × 20 cm size. On the surface of the section specimen, the mass was observed to suppress kidney tissue throughout the entire perirenal surface. The mass, beginning from the renal capsule and growing outwards, had large areas in fiber appearance, included solid areas, as well as loose myxoid areas cystic degenerated areas. A large cystic necrosis area was noted in the central (Fig. 2).

Regular-shaped adrenal gland was observed on the upper pole. In the microscopic evaluation, fibrohistiocyctic cells with hemangiopericytomatic architecture were observed in H&E section specimens (Fig. 3A). There were findings of tumor infiltration including polygonal shaped bizarre nuclei with anaplastic appearance (Fig. 3B). In the cellular areas with marked atypicalness and pleomorphism, increased mitotic activity and large numbers of atypical mitosis were detected (Fig. 3C). Areas of bleeding and necrosis were noted. Immunohistochemical panel revealed widespread positive CD68-staining (Fig. 3D), focal positive CD10-staining, and focal weak SMA-staining. Pancytokeratin, HMB 45, S 100, desmin, CD34 and CD31 stainings were not observed. Using Ki67, proliferation index was about 20% (Fig. 3E), and mitosis was 10–17/10hfp. Significant in the lower pole, tumor was infiltrating to renal parenchyma, renal capsule, and perirenal fat tissue. Although the tumor was examined with numerous specimens, sarcomatoid renal cell carcinoma was excluded in the differential diagnosis because any carcinoma area was detected and any sarcomas were stained with pancytokeratin. Histomorphological and immunohistochemical findings led to a report of pleomorphic indifferentiated sarcoma (malign fibrous histiocytoma; storiform-plemorphic type).

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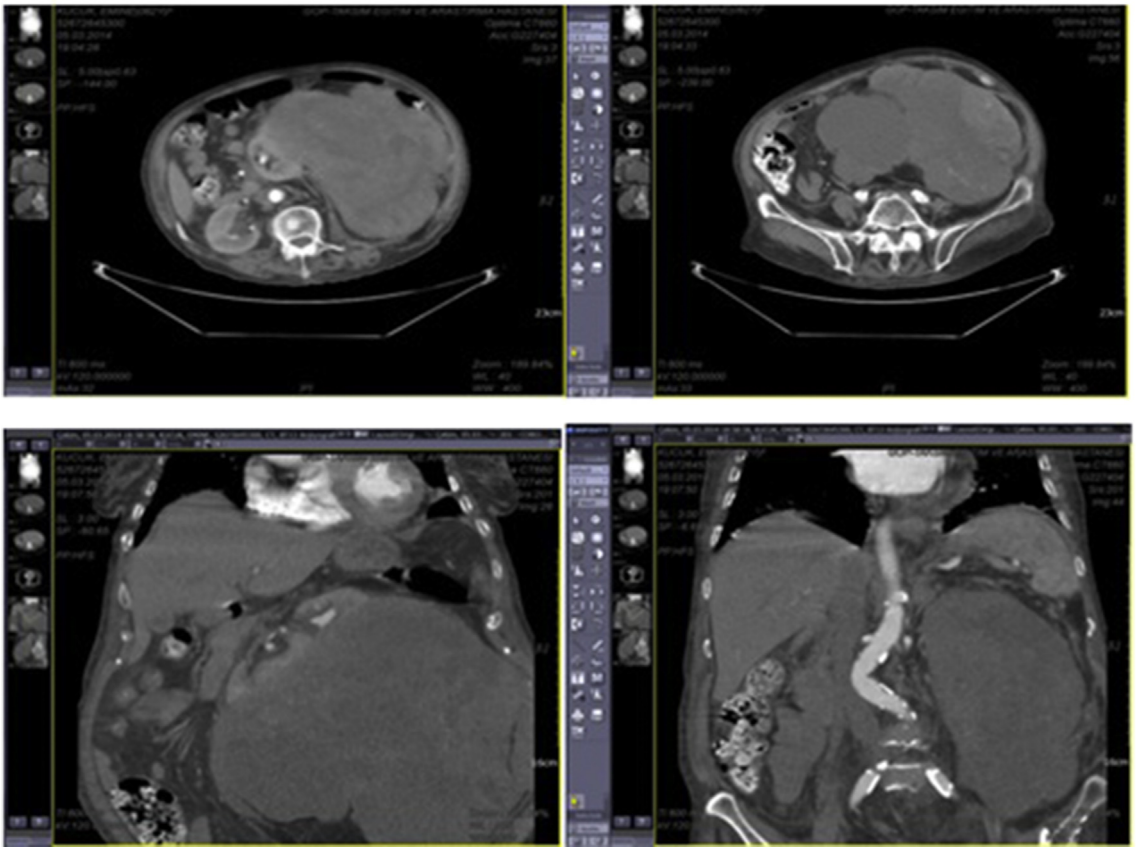

Fig. 1. CT scan of the left kidney mass.

In order to prevent dehydration, hypovolemia, electrolyte imbalance, and hypovolemic shock in the postoperative early phase, the patient was monitored under intensive care conditions. Furthermore, intravenous liquid support was infused with balanced solutions, 150 cc/h. Beginning with the postoperative second day, the patient was monitored in the urology clinic, and there were not any complications. The patient is currently in postoperative third year, and there were not any recurrence or metastasis findings in the follow-up controls up to this point. Follow-up frequency was planned as every three months for the first two years, twice a year up to 5 years, and annually from then on.

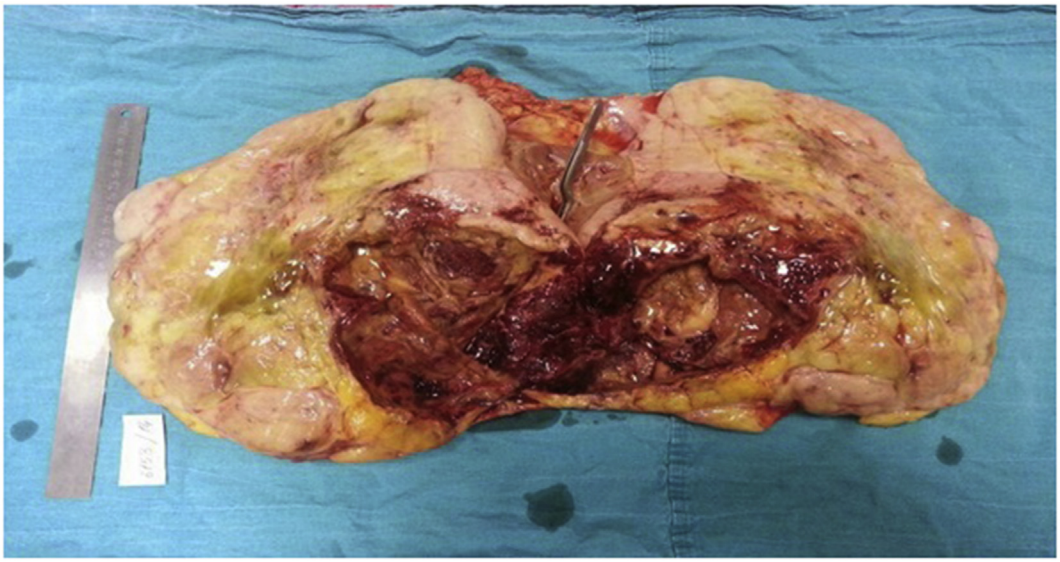

Fig. 2. On macroscopic examination; heterogeneous giant tumor mass was dirty yellow in color and it located outside the lower pole of left kidney. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)