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Postoperative acute kidney failure and incision skin necrosis caused by a giant retroperitoneal paraganglioma

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To the Editor: A 68-year-old man presented with proteinuria of 1-year duration. A giant 22 cm × 18 cm fixed mass was found upon abdominal examination. Laboratory testing revealed severe proteinuria (3.0 g/24 h) and severe hypoalbuminemia 29 g/L (normal range: 40–55 g/L). The patient complained of passing foamy urine for a period of approximately 1 year and that the symptom seemed to worsen in the 20 days before hospital admission. Inflammatory and tumor markers were normal, but contrast-enhanced computed tomography of the abdomen [Figure 1] revealed a giant cystic solid neoplasm extending from the right upper quadrant of the retroperitoneum to the pelvis. A rich supply of blood vessels produced strong enhancement of the tumor surface. The presence of a tumor, proteinuria, and hypoalbuminemia prompted surgical removal of the abdominal mass. En-bloc resection of the mass was not only challenging, but also triggered transient intraoperative hypotension from decompression of the inferior vena cava and minor bleeding from the hypervascularized tumor capsule. The patient experienced postoperative acute kidney failure with increased serum creatine and severe oliguria and partial necrosis of the surgical incision on postoperative day 1. Kidney function completely recovered after 1 month of hemodialysis (three times weekly for 4 h). The necrotic incision skin was replaced by healthy skin following 2 weeks of topical alprostadil, a vasodilation agent. Postoperative histopathological evaluation confirmed a diagnosis of retroperitoneal paraganglioma, an unusual location of this neuroendocrine neoplasm that derives from extra-adrenal chromaffin cells. Most produce neuropeptides (e.g., catecholamines), grow rapidly, and progress with distant metastasis.[1-3] Surgical excision is currently the only curative treatment as retroperitoneal paragangliomas appear to be resistant to radiochemotherapy.[2,3] At the 3-month follow-up visit, the proteinuria had resolved and the serum albumin was nearly normal. The findings confirmed the initial interpretation of tumor-related proteinuria and proteinuria-related hypoalbuminemia. The patient's normal blood pressure was consistent with a nonfunctional paraganglioma. The development of postoperative acute kidney failure indicates that control of decompression during resection of a giant abdominal mass is essential for maintaining stable intraoperative hemodynamics, but the root cause of the acute kidney injury might have been the preoperative proteinuria.[4] Postoperative ischemic necrosis of the skin surrounding an abdominal incision is an extremely rare surgical complication. The efficacy of vasodilator treatment indirectly suggests a cause-effect relationship of insufficient blood supply and the skin necrosis. Increased skin tension resulting from the presence of the tumor seriously compromised the blood supply of the abdominal wall, but aberrant vessels connecting the compressed skin and the tumor were established. Removal of the mass resulted in acute

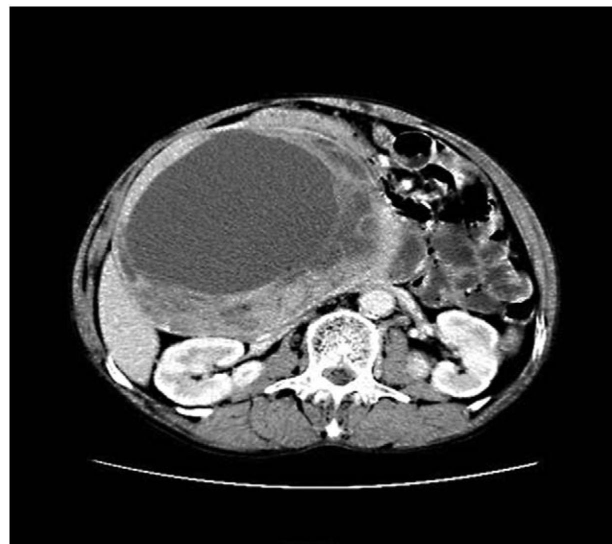

Figure 1: Contrast-enhanced computed tomography of the abdomen (axial view), showing a giant cystic solid neoplasm extending from the right upper quadrant of the retroperitoneum to the pelvis.

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postoperative reduction of the blood circulation in the skin. The latest follow-up at 28 months, found that the patient remained disease-free and was very satisfied with his health status. At that time, he gave informed consent to publish this case report.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initial will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Conflicts of interest

None.

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