

## **Retroperitoneoscopic Nephrectomy and Ex-Vivo Reconstruction for Solitary Kidney with Complex Renal Artery Aneurysms Due to Fibromuscular Dysplasia**

**Introduction and Objective:** Renal artery aneurysm(RAA) is rare but may be associated with several symptoms and rupture. Renal aneurysms are usually treated with endovascular techniques, bypass, in situ repair or autotransplantation with ex-vivo repair. This case with distally located small renal artery aneurysm, large (3.0cm) aneurysm on bifurcation and fibromuscular dysplasia of the proximal renal artery were not amenable to endovascular intervention, bypass or in situ repair. We present this case of three patients who were treated with retroperitoneoscopic nephrectomy, ex-vivo repair and autotransplantation in the ipsilateral iliac fosse.

**Materials and Methods:** A 52 years old female with past history of 14-years hypertension and left nephrectomy was found to have complex RAA on medical examination. Preoperative 3-dimensional computer tomographic arteriography (3D-CTA) and 3D-digital subtraction angiography(3D-DSA) revealed the complex RAA and branch arteries arising from the large aneurysm, and were helpful to determine the repair method. Considering the minimally invasive and cosmetic approach as well as the complicated nature of the RAA, the patient was recommended the above surgical strategy.

**Results:** The patient underwent retroperitoneoscopic nephrectomy, ex-vivo repair and autotransplantation upside down in the ipsilateral iliac fosse. After anastomosing and declamping the renal vessels, the kidney blood perfusion was poor due to renal artery endothelial dissection, which was only solved by trimming and re-anastomosis of the renal vessels. The operation time of retroperitoneoscopic nephrectomy was approximately 6.5 hours and the cold-ischemia time was approximately 7.3 hours. Estimated blood loss was 1405ml. The patient tolerated the operation without any intraoperative complications. The patient was discharged on the postoperative day 19 with a normal serum creatinine level without any complications.

**Conclusions:** To our knowledge, this is the first report of the retroperitoneoscopic nephrectomy, ex-vivo repair and autotransplantation upside down in the ipsilateral iliac fosse in a solitary kidney patient with fibromuscular dysplasia. The patient tolerated these procedures with cosmetic advantage and stable kidney function. 3D-CTA and 3D-DSA may be useful in preoperative planning for complex RAAs. Reconstruction of complex RAAs with fibromuscular dysplasia needs a careful procedure and a detailed planning.

**\*To view this video, please [click here](#)\***