

*Images in Nephrology*  
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## Debaquey III aortic dissection in a hemodialysis patient

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On 11 March 2010, a 51-year-old female on hemodialysis for about 10 years came to our hospital, complaining of abdominal and chest pain during sleep. She also had hypertension for >10 years and her blood pressure was not well controlled. Chest X ray was done, which showed increased lung markings and bilateral lower lung opacities, otherwise unremarkable. She was treated with anti-hypertensives and discharged. On 30 August 2010, the patient was admitted again because of shortness of breath for 1 week. CXR (Figure 1) showed tortuous and expanded aorta and marked protrusion of the aortic arch. Aortic CTA showed chest aorta dissection (Debaquey III)

with thrombosis formation (Figures 2 and 3). The cardiac surgeon recommended conservative therapy by lowering the blood pressure below 140/90 mmHg. But the patient still had chest and back pain from time to time, mainly during hemodialysis. In October 2010, arteriography was done in another hospital, which showed a dissecting aneurism on the left subclavian artery, axillary artery and celiac trunk of the descending abdominal aorta. One covered stent was placed on the celiac trunk and one bare stent and two covered stents were placed on the left subclavian artery. After this treatment, the chest pain remitted. But 5 months later, on April, 2011, the patient complained of left hand cyanosis and pain during hemodialysis. Angiography showed obliteration of the lumen of the stents in the left subclavian artery, which caused



Fig. 1. Chest X ray of the patient on 30 August 2010.



Fig. 2. Aortic CTA of the patient.



**Fig. 3.** Three dimensional reconstruction of the patient's aorta.

insufficient blood flow in the left arteriovenous fistula. Then radiocephalic fistula had to be done on her right arm to satisfy the need of hemodialysis. She felt fairly good until February, 2012, when she began to have chest tightness, and shortness of breath. Echocardiography showed enlargement of the left ventricle and systolic dysfunction with LVEF 31% and mitral insufficiency. Then left arteriovenous fistula ligation was done and the symptoms ameliorated thereafter.

Aortic dissection was rarely reported on hemodialysis patients. In the paper of Jones *et al.* [1], a total of 3.6% aortic dissection patients had chronic renal failure, but it was not clear whether these patients were in the stage of dialysis or pre-dialysis. The optimal therapy for acute Stanford type B aortic dissection is controversial. Generally,

medical management was first considered, unless accompanied by life-threatening complications [2]. In our report, the patient had a history of hemodialysis for 10 years and complicated with Stanford type B aortic dissection. She failed the antihypertensive therapy and endovascular aortic repair was performed. But she experienced left arteriovenous fistula ischemia because of subclavian artery stent obliteration 6 months after placement. Another arteriovenous fistula had to be done on the right arm to maintain hemodialysis, but the double A-V fistula put more burden on the heart which caused heart failure 10 months later, and the arteriovenous fistula ligation had to be performed on her left arm. From this case, we can see that the clinical manifestation and management of aortic dissection in hemodialysis patients may be more complicated than the general population. Sufficient consideration should be given to the arteriovenous fistula when the dissection was treated.

### Authors' contribution

G.Z. provided clinical care for the patient and wrote the manuscript. W.H. provided clinical care for the patient and critically reviewed the manuscript. C.S. provided the surgical management for the patient and reviewed the manuscript.

*Conflict of interest statement.* None declared.

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