

## Mycotic aneurysm of the carotid artery in a chronic haemodialysis patient

Wen-Sheng Ko, Tso-Hsiao Chen and Chung-Yi Cheng

Division of Nephrology, Department of Internal Medicine, Taipei Medical University-Wan Fang Hospital, Taipei, Taiwan

Correspondence and offprint requests to: Chung-Yi Cheng; E-mail: resus@sparqnet.net

**Keywords:** carotid artery; haemodialysis; mycotic aneurysm

A 69-year-old male had been receiving maintenance haemodialysis for end-stage diabetic nephropathy via a right forearm arteriovenous fistula three times a week for 7 years. He had noted left neck pain with swelling for 5 days before admission. On presentation, his body temperature was 37°C, heart rate was 92 beats/min and blood pressure was 113/76 mmHg. A physical examination revealed a palpable, tender, immovable and non-pulsatile mass of the left neck. No significant heart murmur or neurologic deficit was found in the examination. The patient also had left toe gangrenous change with multiple ulceration wounds. The lesion had been slowly progressing over the past 6 months. The arteriovenous fistula over the right forearm showed no erythematous change or local heat.

The patient's haemoglobin was 11.5 g/dl, white blood cell count was 13 680/μl, serum creatinine was 5.0 mg/dl and C-reactive protein was 16.5 mg/dl. Neck computed tomographic (CT) angiography revealed a 5.7 × 5.2 × 3.6-mm mass lesion with internal homogeneous low-density and marginal enhancement, encasing the left common carotid artery bifurcation (Figure 1). The image was compatible with a ruptured left carotid aneurysm. The patient underwent an emergent operation. Excision of the common to internal carotid artery aneurysm with an external jugular vein graft bypass was performed. The pathology exami-

nation revealed necrosis and necrotizing inflammation in the vascular wall associated with purulent inflammatory infiltrates. Some bacterial clumps in the inflammatory infiltrates and necrotic vascular wall were revealed by haematoxylin and eosin (H&E) staining (Figure 2). The culture of the resected aneurysm was positive for methicillin-resistant *Staphylococcus aureus* (MRSA). Blood cultures yielded an identical strain of MRSA.

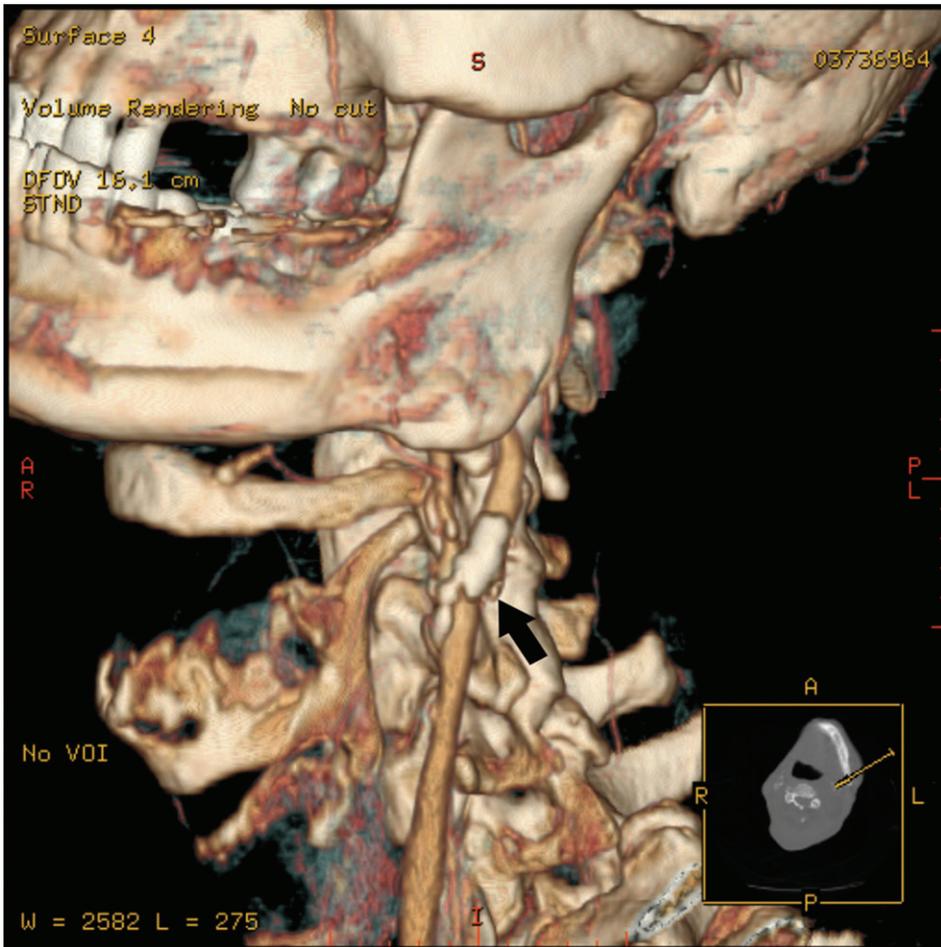
A carotid mycotic aneurysm is a rare complication in chronic haemodialysis patients. Arterial trauma is the primary aetiology in 42% of all mycotic aneurysms, with an increasing trend over the past four decades [1]. Multidetector CT angiography is the imaging modality of choice for the localization and detection of the vascular lesion extent and surveillance of the effectiveness of treatment [2,3].

*Conflict of interest statement.* None declared.

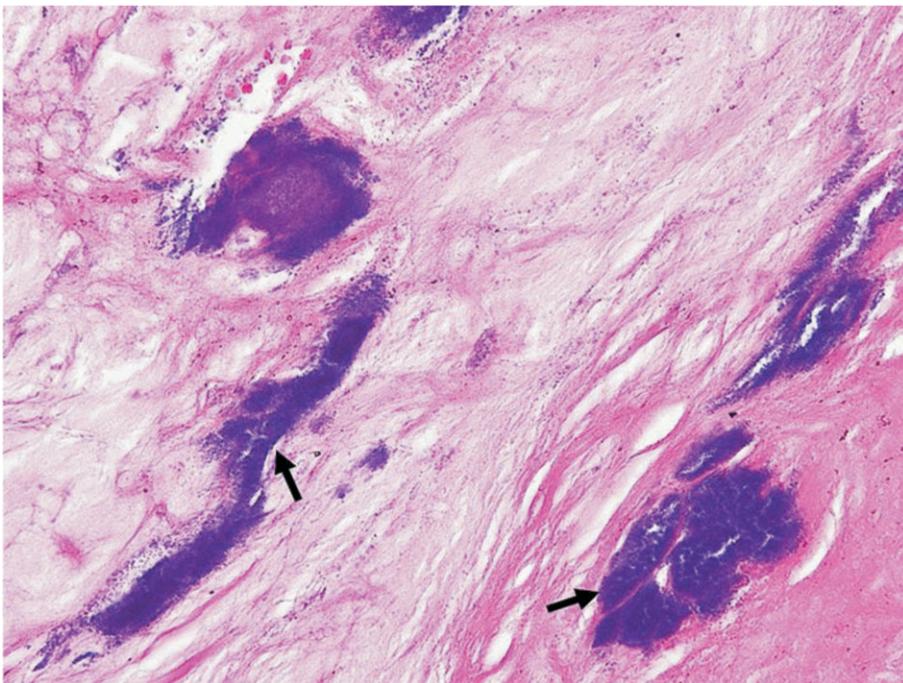
### References

1. Brown SL, Busuttill RW, Baker JD *et al.* Bacteriologic and surgical determinants of survival in patients with mycotic aneurysms. *J Vasc Surg* 1984; 1: 541–547
2. Lee WK, Mossop PJ, Little AF *et al.* Infected (mycotic) aneurysms: spectrum of imaging appearances and management. *Radiographics* 2008; 28: 1853–1868
3. Abdel-Azim TA. Infected aortic aneurysm. *Acta Chir Belg* 2005; 105: 482–486

*Received for publication: 13.8.09; Accepted in revised form: 14.9.09*



**Fig. 1.** CT image reconstruction showing an aneurysm encasing the left common carotid artery bifurcation (black arrow). **Insert** (bottom right corner): Direction and cross-sectional view of the image.



**Fig. 2.** Bacterial clumps deposited in the necrotic vascular wall (black arrows) (H&E stain,  $\times 200$ ).