Netherlands
The Journal of Medicine

PHOTO QUIZ

Severe arch vessel disease

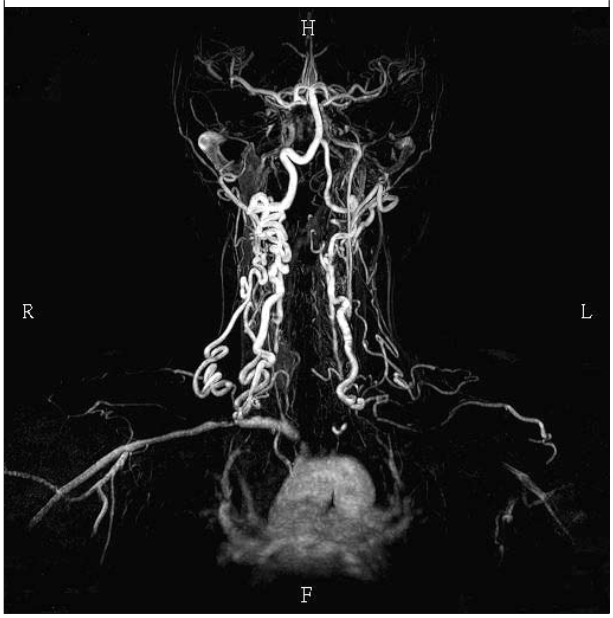
C-C. Cheng[1], T-P. Tsao[1], C-H. Peng[2], S-P Yang[1*]

[1]Division of Cardiology, Department of Medicine and [2]Department of Neurology, Tri-Service General Hospital, National Defence Medical Centre, No. 325, Section 2, Cheng-Kung Road Neihu 114, Taipei, Taiwan, Republic of China, [*]corresponding author: tel.: +886-2-8792-7160, fax: +886-2-8792-7161, email: allan@tma.tw

CASE REPORT

A 41-year-old woman was hospitalised due to sudden onset of blindness of the right eye for three hours. She had been fit before, except for suffering from episodes of transient visual defect lasting a few seconds. She was alert but looked ill. Physical examination revealed a blood pressure of 70/50 mmHg in the upper limbs and 110/70 mmHg in the lower ones. Neither of the carotid pulses were palpable. Heart, lungs, and abdominal examinations were unremarkable. She was anaemic with a haemoglobin of 5.3 mmol/l. Chest radiographs revealed normal cardiac size with tortuosity of the aorta. Magnetic resonance angiography of the aortic arch vessels was carried out (*figure 1*).

Figure 1. *Magnetic resonance angiography of the aortic arch vessels*



WHAT IS YOUR DIAGNOSIS?

See page 92 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (ON PAGE 91)

SEVERE ARCH VESSEL DISEASE

DIAGNOSIS AND TREATMENT

The magnetic resonance angiography showed total occlusion of the bilateral common carotid and left subclavian arteries. The remaining critically stenotic brachiocephalic artery supplied the entire circulation of brain via complex collaterals. The clinical features and vascular imaging were consistent with Takayasu arteritis (TA). Because of the high risk of hypoxic cerebral injury associated with the surgical techniques used in revascularisation based on the anatomic findings, we decided to use percutaneous transluminal angioplasty (PTA) for the treatment of the critical stenosis of the brachiocephalic artery (*figure 2A*). The lesion was first dilated with a 4.0 x 20 mm balloon. An 8.0 x 17 mm Express LD stent (Boston Scientific, Natick, MA, USA) was then successfully deployed at the stenotic lesion (*figure 2B*). The patient did not develop complications during the procedure. She was discharged after a hospitalisation of one week. There was no neurological dysfunction noted during one-year clinical follow-up.

REMARKS

Cardiac, renal and central nervous system vascular diseases are the principal causes of morbidity and mortality in TA and the mortality rate may be as high as 35% during five-year follow-up.[1] Currently PTA is regarded as a safe and effective modality of treatment in Takayasu's disease. Most of the vascular lesions in TA are short, with relatively large vessel diameter, which are the ideal target lesions for PTA. However, the rate of vascular restenosis in Takayasu's disease treated by balloon angioplasty is much higher than that observed in atherosclerotic lesions.[2] Bali *et al.* followed six patients with Takayasu's arteritis treated with aortic stenting for six months. No significant instent restenosis was noted among them.[3] Sharma and his colleagues showed that the instent restenosis rate was about 13.3% (2/15) in patients with Takayasu's disease.[4] This result is similar to that observed in atherosclerotic lesions. However, large-scale and long-term prospective studies are needed in order to clarify this point.

REFERENCES

1. Hoffman GS. Treatment of resistant Takayasu's arteritis. Rheum Dis Clin North Am 1995;21:73-80.
2. Tyagi S, Verma PK, Gambhir DS, Kaul UA, Saha R, Arora R. Early and long-term results of subclavian angioplasty in aortoarteritis (Takayasu disease): comparison with atherosclerosis. Cardiovasc Intervent Radiol 1998;21:219-24.
3. Bali HK, Bhargava M, Jain AK, Sharma BK. De novo stenting of descending thoracic aorta in Takayasu arteritis: intermediate-term follow-up results. J Invasive Cardiol 2000;12:612-7.
4. Sharma BK, Jain S, Bali HK, Jain A, Kumari S. A follow-up study of balloon angioplasty and de-novo stenting in Takayasu arteritis. Inter J Cardio 2000;75(suppl 1):S147-52.

Figure 2. *(A) Angiography showed a critical stenosis (arrow) over brachiocephalic artery and absence of right common carotid artery, (B) an 8.0 x 17 mm stent (arrows) was deployed to the critical lesion with excellent angiographic results*