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Arteria Lusoria Diagnosed by Transradial Coronary Catheterization

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A 51-year-old man with a history of hypertension presented with chest pain and was admitted for elective coronary angiogram. Coronary angiogram via radial artery, a 0.035-inch (190-cm) guidewire (Terumo Corp., Tokyo, Japan) could only advance directly to the descending aorta. Ascending aorta and subsequently the coronary cusp could only be advanced after the guidewire had gone through the descending aorta. Coronary angiogram, however, revealed no significant stenosis. Arch aortogram showed the right subclavian artery arose from the distal aortic arch with an acute angle (about 70°) (Fig. 1A). Subsequent magnetic resonance angiogram has confirmed the diagnosis (Fig. 1B), demonstrating the right subclavian artery originating from the descending thoracic aneurysm.

Discussion

Increasing numbers of transradial coronary angiographies have been performed because of the high success rate, low risk of complication, and patients'

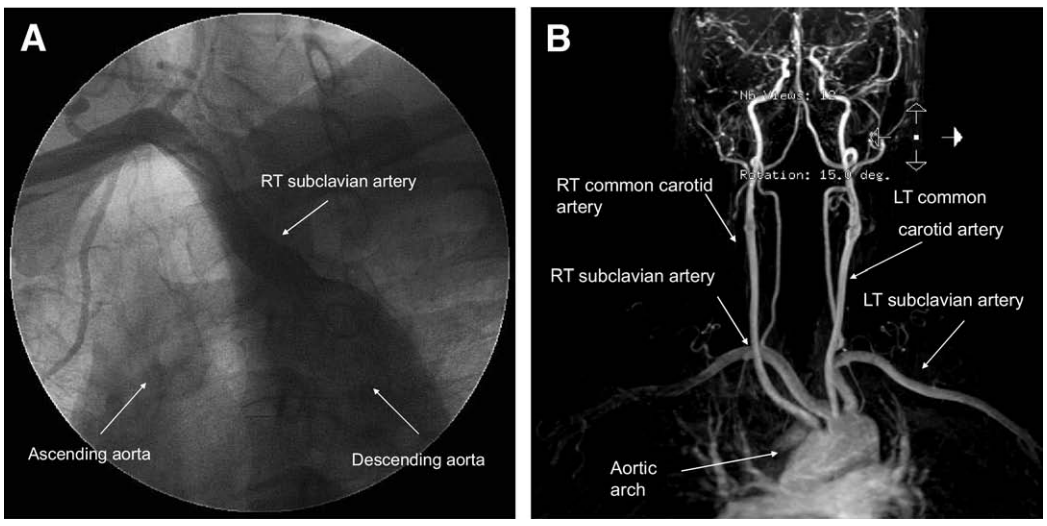

Figure 1. Arch Aortogram and MRA of the Major Arteries of the Upper Body

(A) Arch aortogram is performed via the descending aorta transradially at left (LT) anterior oblique view using a 6-F pigtail catheter with 30-ml noniodinated contrast injection. The diagram shows the abnormal origin of right (RT) subclavian artery arising directing from the descending aorta instead of the right innominate artery. **(B)** This magnetic resonance angiogram (MRA) illustrates that instead of a originating from a common innominate artery, both the RT common carotid artery and RT subclavian artery arise from a separate origin directly from the aorta. The abnormal origin of right subclavian artery is at the descending aorta distal to the origin of the right common carotid artery.

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comfort (1). However, procedure failure could be due to various reasons including aberrancy of right subclavian artery, or arteria lusoria, which occurred in about 0.2% to 1.7% of cases (2). This is an uncommon condition that is often not diagnosed as it is usually asymptomatic; however, increasing popularity of transradial coronary angiogram raises the chance of diagnosis. The congenital variant made right transradial angiogram more difficult as wires and catheters are required to arc back from the descending aorta to the ascending aorta before reaching the coronary sinus. As in our case, repeated entering of the guidewire into the descending aorta rather than the ascending aorta should raise suspicion of this entity (3). Although technically difficult, it is feasible to continue the procedure without switching to the femoral artery approach if one is aware of such a variant. During right transradial coronary angiogram, clinicians should therefore be alert for this anomaly when the guidewire or catheter enters the descending aorta instead of ascending aorta.

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