Diagnosis of Subclavian Steal :
Contrast Enhanced 3D MR Angiography vs 2D TOF

이호규 • 김건언* • 최중곤 • 서대철

울산의대 서울중앙병원 방사선과, *혈관외과

목적 : Subclavian steal refers to the retrograde flow of blood in a vertebral artery that supplies t ipsilateral shoulder and arm caused by proximal subclavian artery stenosis or occlusion. T purpose of this exhibit is to demonstrate MR findings of subclavian steal on contrast-enhanc 3D (CE 3DMRA) and 2D TOF MR angiography.

대상 및 방법 : Four patients(men 3 and women 1, age: 28-78years) with subclavian steal obtained both CE 3DMRA and digital subtraction angiography(DSA) including subclavian arterie Sequential imaging was undertaken during first pass after double dose of Gd-DTPA (0 mM/kg) injected by a power injector. Coronal source images were obtained with coronal D-fast low angle shot sequence(TR/TE/flip angle=3.8/1.3/35, acquisition time=10sec/one measurement). Precontrast imaging was subtracted from enhanced images and maximu intensity projection was done. 2D time-of-flight MR angiography(2D TOF) of the carot bifurcation was added in all cases with post-saturation. All studies were review retrospectively.

결과 : Three patients(Takayasu arteritis 2 and atherosclerosis 1) had vertebro-vertebral(VV) ty and one patient(atherosclerosis) had vertebro-cervical(VC) type of subclavian steal. A patients had occlusion of the left proximal subclavian artery. In VV type, CE 3DMRA show left vertebral arteries in all, but 2D TOF detected left vertebral artery in only one case. A DSA showed delayed filling of the left distal subclavian artery, CE 3DMRA in the late arter phase revealed gradual increased signal intensity of the left subclavian artery. In one V type, CE 3DMRA showed subclavian steal, but 2D TOF didnt detect retrograde flow but few of collaterals on the left neck.

결론 : CE 3DMRA is a potent tool to evaluate patients with subclavian steal, and 2D TOF would added to demonstrate the blood flow direction in the neck vessels.