

Neuroendovascular Intervention Through Transradial Route Hoon Kim; Seong Rim Kim MD; Min Woo Baik MD; Young Woo Kim MD

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Introduction

Most interventionists prefer to use the transfemoral approach for access. Transfemoral approach, however, is not possible in some patients. Extensive atherosclerotic disease in the aortic arch, atypical aortic arch anatomy, dissection of the thoracic aorta, iliofemoral occlusive disease, and infection in the groin are some of the limitations for femoral access. This study reports our experience using the radial artery (RA) as access route for neuroendovascular intervention.

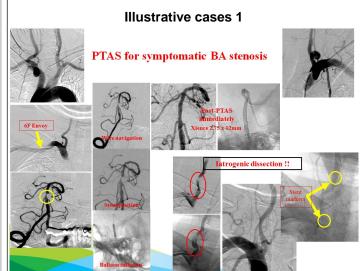
Methods

From February 2007 to May 2012, 31 patients (17 men and 14 women; mean age 65.9, range 43~85) underwent neuroendovascular intervention through transradial approach (TRA).

Percutaneous transluminal angioplasty with stent (PTAS) for extracranial vertebral artery (VA) stenosis in fifteen patients (14 VA ostium and 1 V2), for basilar artery (BA) stenosis in two, for V4 stenosis in five and for proximal internal carotid artery (ICA) stenosis in one was performed. In addition, PTA for middle cerebral artery (MCA) stenosis in one was performed. Coil embolization for unruptured aneurysms was done in seven patients (1 BA top, 1 BA-superior cerebellar artery, 2 MCA bifurcation, 1 posterior communicating artery and 2 paraclinoid ICA). The authors evaluated technical success rate and access site complications, such as peripheral nerve injury, hematoma, RA occlusion, and arm pain.

Results

Procedural success was achieved in 31 patients (100%). RA occlusion occurred in one patient. In two patients, neuroendovascular intervention were not available through transfemoral route; due to tortuous angle between the innominate artery and right subclavian artery, and due to bilateral femoral artery occlusion. In patient with BA stenosis, a 6-French quiding catheter was placed in the V2 portion of the right VA. The BA stenosis was successfully treated with primary stent deployment. But, post-stent distal subtraction angiography showed a hemodynamically significant dissection flap in V1 portion of the right VA. For this lesion, additional PTAS using Enterprise stent was done. DSA after deployment showed excellent resumption of flow to BA, decreased filling and contrast stasis within the false lumen.



Conclusions

Neuroendovascular interventions using TRA are recommended in patients with unfavorable anatomy or contraindication for transfemoral approach. Further study is needed to clearly define the patients who mostly benefit from this technique.

Learning Objectives

By the conclusion of this session, participants should be able to

1) identify the fact that TRA is an alternative to the femoral approach for neuroendovascular intervention.

2) discuss potential advantages of TRA over the transfemoral approach.

References

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