Simple Management of Radial Artery Perforation during Transradial Percutaneous Coronary Intervention

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Radial artery perforation is one of the major complications of transradial percutaneous coronary intervention (PCI). Previous reports have suggested that sealing the perforation with a smaller guiding catheter may be possible. In one such study, the perforated segment was sealed with a 0.014- or 0.021-inch guidewire, and PCI was successfully completed. In this study, we describe a radial artery perforation that occurred after diagnostic coronary angiography and during insertion of a 6 French (FR) guiding catheter. PCI and the perforation were successfully managed through the use of a 5 Fr guiding catheter and a 0.035-inch guidewire. (Korean J Med 2016;90:136-139)

Keywords: Percutaneous coronary intervention; Radial artery; Perforation

INTRODUCTION

The radial artery has become the most common access site for coronary angiography and percutaneous coronary intervention (PCI) since transradial intervention results in fewer local vascular complications than transfemoral intervention [1]. This procedure rarely results in complications, improves patient comfort, and reduces the duration of hospitalization [2]. Despite the fact that complications are rare, radial artery perforation can result in compartment syndrome and acute hand ischemia [3]. The aim of this study was to share our experience in managing iatrogenic radial artery perforation.
CASE REPORT

A 69-year-old male was hospitalized for coronary intervention after evaluation by computed tomography (CT) revealed critical stenosis of the distal left circumflex artery (LCX).

The patient underwent coronary angiography via the left radial route with a 6 French (Fr) sheath (Terumo Corp., Tokyo, Japan) inserted using standard techniques. The left radial angiography showed a minor degree radial artery spasm (Fig. 1A). After injecting 200 μg of nitroglycerin via the radial artery, coronary angiography was successfully performed with 5 Fr JL4 and JR4 diagnostic catheters. The distal LCX lesion was similar to the lesion revealed by the coronary CT scan (Fig. 2A); therefore, PCI was deemed the best treatment option. During insertion of a 6 Fr extra back-up (EBU) guiding catheter (Medtronic, Dublin, Ireland) over a 0.035-inch standard guidewire, the catheter encountered resistance and the patient complained of pain in the left forearm. After removing the 6 Fr EBU guiding catheter, radial angiography was performed by injecting diluted contrast agent through the side port of the sheath. The contrast agent revealed perforation and extravasation of contrast agent into the surrounding tissue (Fig. 1B). A 5 Fr EBU was able to pass the perforated segment over the remaining 0.035-inch standard guidewire. PCI was performed successfully with balloon an-

Figure 1. Baseline radial angiogram showing a minor degree spasm (arrow) (A). Perforation of the radial artery and extravasation of contrast agent into the surrounding tissue (arrowheads) (B). N, nitroglycerin.

Figure 2. Successful percutaneous coronary intervention of the left circumflex artery (arrow) via the radial artery after perforation (A, B). N, nitroglycerin.