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Emergency surgical treatment of a percutaneous closure device complication in a patient with transfemoral transcatheter aortic valve implantation

Transfemoral transkateter aort kapak implantasyonu yapılan bir hastada perkütan kapatma cihazı komplikasyonunun acil cerrahi tedavisi

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Transfemoral, transsubclavian, transapical, and direct aortic access routes have been suggested for transcatheter aortic valve implantation (TAVI).[1] Earlier, open surgical access was routinely used to introduce large sheaths and catheters. Transfemoral access route was the most widely used and also associated with vascular complications more frequently.[2,3] Subsequently, percutaneous techniques have emerged as the new standard, resulting in a less invasive, fully percutaneous procedure. The aim of this case presentation is to share the management of Perclose proglide-based vascular closure failure in patient with transfemoral TAVI.

Case– A-64-year-old woman with chest pain and functional dyspnea Class III was referred to our institution with severe aortic stenosis. Transthoracic echocardiography revealed a mean aortic pressure gradient of 49 mmHg and aortic valve area of 0.65 cm^2 according to the continuity equation. The aortic annulus diameter which was measured using transesophageal echocardiography was 24 mm. There was no critical stenosis of the coronary arteries. The logistic EuroSCORE and Society of Thoracic Surgeons scores were calculated as 27% and 8.5%, respectively. The heart team decided to perform TAVI through the transfemoral access route.

After the successful deployment of a 26 mm CoreValve (Medtronic, Minneapolis, MN, USA) in to the aortic annulus, arteriogram for femoral closure to check the vessel patency revealed an unexpected occlusion with contrast dye in the common femoral artery (CFA) (Figure 1a, b). Radiological intervention such as thrombectomy or balloon dilatation was not considered due to the risk of rupture. Emergency surgery was decided for vascular repair. The CFA exploration

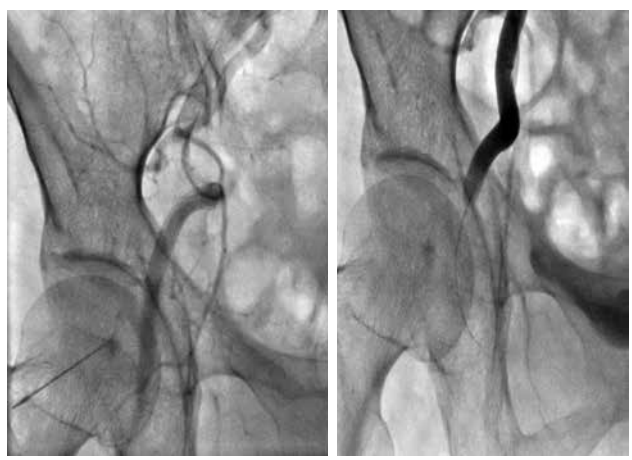

Figure 1. Arteriogram revealed the occluded common femoral artery with contrast dye.

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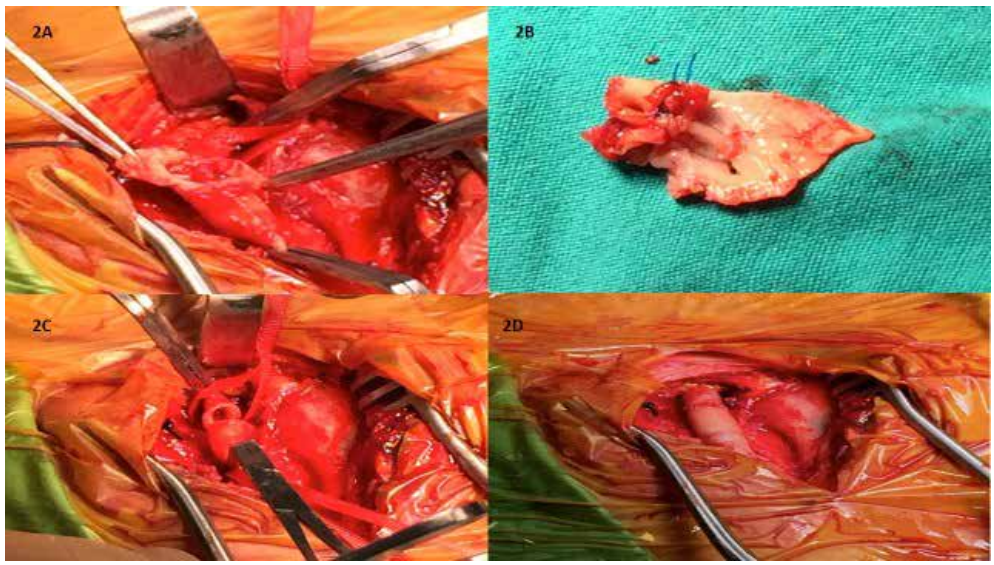

Figure 2. Common femoral artery exploration revealed the sutured walls of artery and occlusion by percutaneous closure device **(a)** also inner view of sutured arterial walls **(b)**, occuled segment of artery was excised **(c)** and repaired with end to end anastomosis **(d)**.

revealed the sutured walls of artery and occlusion by closure device (Figure 2a, b). The occluded segment of artery was excised and repaired with end-to-end anastomosis technique (Figure 2c, d). The postoperative course was uneventful and discharged after four days.

In conclusion, currently, fully percutaneous transcatheter aortic valve implantation procedure is the new standard with relatively small diameter introducers; however, vascular closure device failure can lead to serious complications and emergency surgery.

Declaration of conflicting interests

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