

snare loop and extracted from the RFV (Fig. 1, Video 1. See corresponding video/movie images at www.anakarder.com). The same technique was tried for the RV ICD lead but it was not successful. Then a steerable 4 mm radiofrequency (RF) ablation catheter was sent and rotated around the RV lead then entrapped by the snare-loop. Snare-loop was pulled down and the both ends of the RV lead were released (Fig. 2, Video 2. See corresponding video/movie images at www.anakarder.com). Then the lead was entrapped by the snare-loop and totally extracted through the right femoral vein (Video 3. See corresponding video/movie images at www.anakarder.com). After a week, a new biventricular- ICD system was implanted to right site and patient was discharged uneventfully.

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Video 1. The extraction of coronary sinus lead by snare-loop device
Video 2. The grabbing of steerable radiofrequency ablation catheter by snare-loop device and pulling down the right ventricular lead
Video 3. The entrapment of right ventricular lead by snare-loop and total extraction of lead through the right femoral vein

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Transarterial closure of long tubular PDA by duct occluder in an infant with interrupted inferior vena cava and azygos continuation

Kesintili vena kava inferior ve azygos devamlılığı olan infantta uzun tübüler PDA'nın dukt "occluder" ile transarteriyel yoldan kapatılması

Long tubular patent ductus arteriosus (PDA) are difficult to close with ordinary detachable coils or duct occluder. Even worst interrupted inferior vena cava (IIVC) could make the situation harder. We report a case of transcatheter closure of patent ductus arteriosus using the classic duct occluder type device in a 3.5 months-old infant with IIVC with azygos continuation via the femoral artery approach. The infant admitted to our hospital for treatment of heart failure. She was 5.4 kg in weight and 60 cm in length. She had tachycardia and tachypnea. Echocardiography revealed a moderate PDA with 4 mm in diameter and had an unusually long shape. Left heart dimensions were markedly increased (LVDd; 3.1 cm, LAD; 2.4 cm). Since she had also cleft lip and palate she had been fed by nasogastric tube. The angiographies showed azygos vein continuation (Fig. 1) and long tubular moderately large PDA (Fig. 2) which had 4.3 mm angiographic diameter and 24 mm length (Video 1. See corresponding video/movie images at www.anakarder.com). Lifetech 6/8 mm PDA occluder was chosen for closure. Although we placed delivery sheath



Figure 1. Angiographic appearance of interrupted vena cava inferior and azygos continuation



Figure 2. Lateral view of long tubular duct

regularly from venous site to the descending aorta duct occluder could not be placed in desired form. The manipulation was also highly difficult causing transient heart block. The deployment procedure was attempted from arterial site. Another 4 French sheath placed for control angiogram. Long tubular duct allowed us to place correctly the duct occluder retrogradely. Complete occlusion of PDA was showed by control angiogram (Fig. 3, Video 2. See corresponding video/movie images at www.anakarder.com). Alternative paths and devices must be considered according to features of case.



Figure 3. Control angiogram showing complete occlusion of PDA

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Video 1. Angiographic appearance of interrupted vena cava inferior, lateral and right anterior oblique views of long tubular duct.

Video 2. Transarterial placement of duct occluder and angiographic views before and after deployment of device.

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