

## EP CASE REPORT

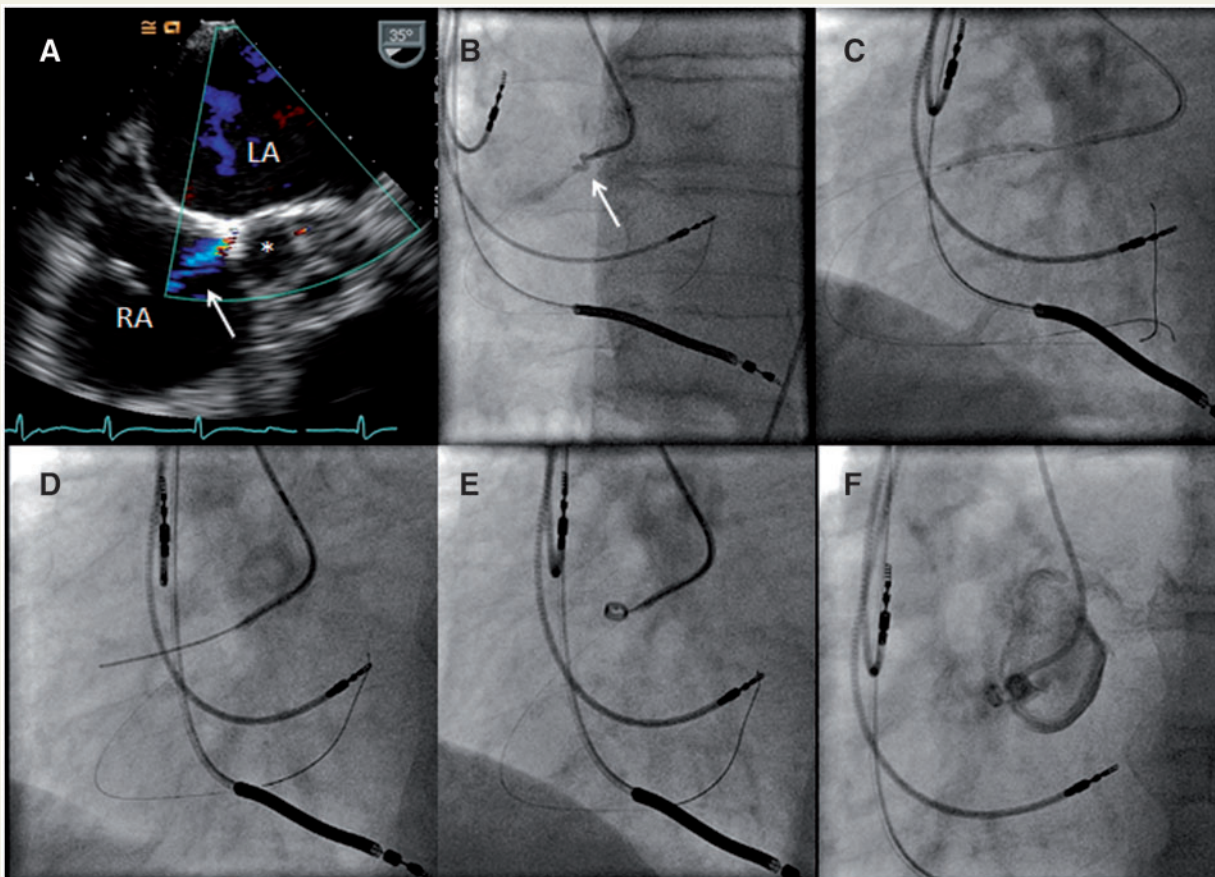
# The use of vascular detachable coil for percutaneous closure of iatrogenic aorto-right atrial fistula

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The number of intracardiac procedures requiring transeptal access has sharply increased in the recent years, therefore, complications associated with this technique are inescapable.<sup>1</sup> One of the most fearful is puncturing the aorta. Percutaneous treatment of iatrogenic aorto-right atrial fistulas represents an attractive alternative to surgery. Here, we report that small fistula could be effectively treated with a vascular coil.

We present a 68-year-old men with paroxysmal atrial fibrillation, in whom the aorta was inadvertently punctured while obtaining transeptal access for pulmonary vein isolation. After the complication had been identified, the patient was transferred to the hybrid operating room, where transeptal sheath was retracted from the aorta. After sheath retraction, the patient was stable with no pericardial effusion, therefore, surgery was suspended and the leakage was left to heal. Transoesophageal echocardiography taken 2 months later revealed connection between the non-coronary sinus of Valsalva and the right atrium (RA), which measured 3 mm in diameter (*Figure 1A*). Percutaneous closure of the fistula was attempted. The fistula was intubated from the aortic side with a guiding Amplatz Right 2.5-Fr catheter (*Figure 1B*).



**Figure 1** (A) Flow (arrow) between the aorta and the right atrium (RA), originating above a non-coronary aortic valve cusp (asterisk); (B) fistula (arrow) intubated with a guiding catheter; (C–F) implantation of a detachable coil. LA, left atrium; RA, right atrium.

Two intracoronary wires were passed through the fistula into the RA. With a support of a balloon catheter positioned in the RA, the catheter was able to cross the fistula (Figure 1C). The 5-mm detachable coil (MReye® Flipper®, Cook Medical) was utilized (Figure 1D). The first two loops were created in the RA (Figure 1E), subsequently the catheter was retracted and the other two loops were formulated at the aortic side. After stable position of the coil had been confirmed, the device was detached from a delivery system. The procedure resulted in immediate leakage blockage (Figure 1F).

Significant aorto-right atrial shunt results in chronic volume overload of the right heart leading to pulmonary hypertension and congestive heart failure, but even small fistulas with potentially irrelevant shunting need treatment as they predispose to infective endocarditis or aortic dissection. Spontaneous closure of aorto-right atrial fistulas has been reported in case of small connections, however; if this fails surgical or percutaneous closure should be warranted.<sup>2</sup> Surgical treatment consists of suture ligation or Dacron patch closure, which proved to be effective and safe. Nowadays, percutaneous treatment represents an attractive alternative to surgery. To date, in percutaneous approach, vascular plugs, duct occluders, or atrial septal occluders have been utilized. In case of small fistulas, vascular coils could be implanted with excellent outcome as it was shown in herein case.

**Conflict of interest:** None declared.

## References

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