



Rare complication of inadequate sealing caused by anchor slip through the fabric part in a left atrial appendage closure device

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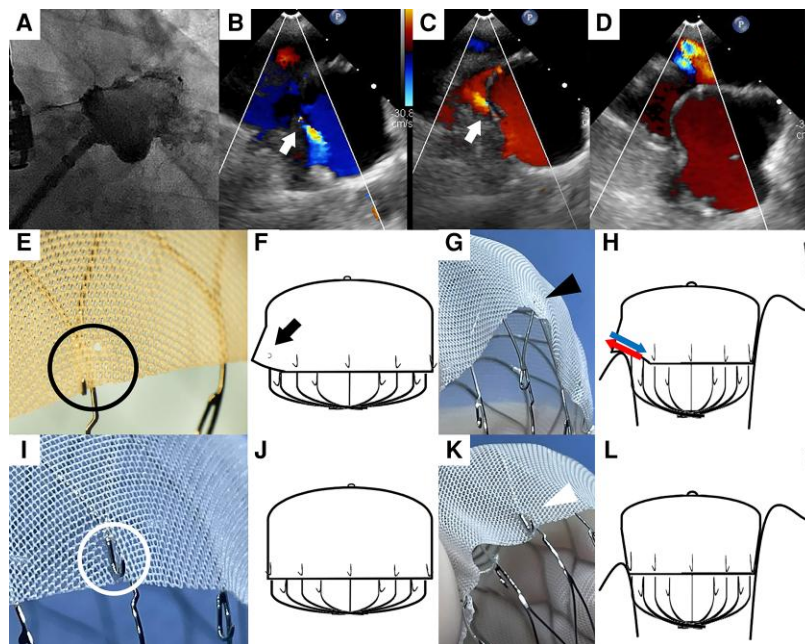


Figure 1 We attempted to place the WATCHMAN-FLX 31 mm device in the left atrial appendage (LAA) (A). The residual blue colour Doppler flow was observed inside the LAA (white arrow) identified by transoesophageal echocardiography (TEE) (B). The red colour jet flow was, in contrast, found outside the LAA (white arrow) (C). The new WATCHMAN-FLX device was redeployed in a similar position in the LAA, and the TEE showed no residual leak flow (D). Physical examination of the retrieved WATCHMAN-FLX device revealed the existence of a pinhole in the fabric area and the detachment of the anchor (black circle) (E). The schema of this phenomenon showed that the anchor slipped through the fabric area (black arrow) (F). The fabric part without anchoring was easily opened (black arrow head) when the device was compressed from the outside by a human hand (G); thus, we speculated that there was residual flow (bidirectional flow) in the LAA at the first attempt (H). The unused intact WATCHMAN-FLX shows that the anchor part is hooked (white circle) through the small pinhole inside the fabric area (I and J). The fabric area, without dislodgement of the anchor, was not opened (white arrow head) if the device was compressed by a human hand (K), resulting in no residual flow in the LAA (L).

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Summary

The structure of the WATCHMAN-FLX device is designed to have dual-row anchor parts, and the proximal anchors are hooked into the fabric area. The recapture procedure of WATCHMAN-FLX may cause anchor dislodgement through the fabric area. The anchor slip phenomenon may be considered when unusual residual leak flow through the proximal fabric area is identified by transoesophageal echocardiography.

Case description

A 77-year-old man who had a history of stroke and major bleeding underwent percutaneous left atrial appendage (LAA) closure. After several device recapture attempts using the WATCHMAN-FLX 31 mm (Boston Scientific, Marlborough, MA, USA), the device was implanted in the correct position of the LAA (Figure 1A). However, transoesophageal echocardiography (TEE) identified an abnormal minor leak flow through the proximal body surface (Figure 1B and C). The leak flow appeared to have originated in the fabric area of the device. Therefore, we switched to a new device. Although the new WATCHMAN-FLX device was deployed in a similar position compared with the previous attempt, the residual leak inside the device had disappeared (Figure 1D). Visual and microscopic examination of the retrieved WATCHMAN-FLX device revealed the existence of a pinhole in the fabric area and the detachment of the anchor (Figure 1E). This phenomenon could be explained by anchor slippage through the fabric part of the device caused by frequent recapture attempts (Figure 1F), which caused the residual flow in the LAA (Figure 1G and H). The proximal

anchor parts of WATCHMAN-FLX were hooked without a strong connection through the small pinhole inside the fabric area (Figure 1I and J). We speculate that the anchor part was not dislodged in the second attempt of this case (Figure 1K), resulting in no residual flow in the LAA (Figure 1L).

In patients using the WATCHMAN-FLX device during the procedure, physicians should follow the traditional criteria that include the four important components of position, anchor, size, and sealing of the device. In this case, detailed and careful observation with intraoperative TEE allowed us to identify the existence of inadequate sealing with a small leak flow. Although rare, physicians should be aware of the potential risk for anchor dislodgement after the recapture procedure of the WATCHMAN-FLX device.

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Data availability

Data sharing is not applicable to this report as no datasets were generated or analyzed for this case.