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Letter to the Editor

A rare complication of the use of the 6 French suture-mediated closure device

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MANAGEMENT OF THE SITE OF ARTERIAL ACCESS after percutaneous interventions is of increasing importance, due to the increasing use of antiplatelet pharmacotherapy. Obtaining immediate arterial haemostasis can prevent prolonged immobilisation, along with the potential arterial damage linked to cannulation using long arterial lines. Various devices have been employed to obtain such haemostasis after femoral arterial puncture.[1–3] All have been shown to be safe and effective, and allow early ambulation, without increasing the risk of haemorrhagic complications.[4] The suture-mediated closure device Prostar-Plus (Perclose, Abbott Laboratory, Redwood City, CA) is made up of a sheath, 1 or 2 pairs of needles connected by a suture loop, and a rotating barrel which facilitates the positioning of the device and the deployment of the needles. Rare neurological accidents linked to the use of Prostar-Plus have been reported.[1] As far as we are aware, however, no cases needing the surgical removal of the suture have been published. An improved single-stitch version of the Prostar Plus, the so-called "6F Closer", has recently been developed. It does not require enlargement of the subcutaneous path, and achieves successful closure even after insertion of sheaths as large as 8 French.

We report a complication occurring after use of the 6 French Closer device that completely reversed after surgical removal of the suture. An 11-year-old child with congenital aortic stenosis weighing 55 kilograms underwent left heart catheterization. A 7 French introducer was used in order to allow dilation of the aortic valve with a balloon. The procedure was rapid and uneventful. Haemostasis was obtained by using a 6F Closer device. The child was able to sit and walk the same day, and was discharged the day after the procedure. One day after discharge, he started to complain from acute pain at the groin, irradiating through the abdomen, and preventing him from walking. At examination, the femoral pulse was present. Acute pain developed after walking on the heel, suggesting inflammatory or neurological involvement of the psoas muscle. Abdominal echography ruled out the presence of haematoma. Neurological examination showed preserved reflexes. The child was treated with anti-inflammatory drugs for 1 week without any improvement of symptoms. After 10 days, the suture was surgically removed. The knot was in place, and examination of the suture did not show any anomaly. A thin slice of whitish tissue was found between the arterial wall and the suture. To avoid major dissection, the excision was deliberately limited to the point of the suture, but this precluded the precise identification of the entrapped tissue. Two days after removal, all symptoms disappeared and the child was able to walk.

Our experience suggests that, during deployment, the needles of the Closer device could possibly capture adjacent structures, causing pain and preventing ambulation. It is possible that this complication occurs more likely in patients of lower weight. In our patient, symptoms were not transient, but reversed rapidly and completely after removal of the suture. Based on this experience, we recommend early surgical removal if unexplained neurological or muscular symptoms develop after use of the Closer device.

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