

ARTERIOVENOUS FISTULA WITH VENOUS ANEURYSM AS A COMPLICATION OF THE TRAPEZIOMETACARPAL ARTHRODESIS

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An iatrogenic radial artery-cephalic vein fistula with venous aneurysm occurred in a 55-year-old woman as a complication of trapeziometacarpal arthrodesis. The clinical diagnosis was confirmed by humeral arteriography. The fistula was ligated, and the aneurysm was removed successfully.

Keywords : wrist ; trauma ; blood vessels ; arteriovenous fistula.

Mots-clés : poignet ; traumatisme ; vaisseaux ; fistule artério-veineuse.

CASE REPORT

A 55-year-old woman with a diagnosis of right trapeziometacarpal osteoarthritis underwent joint arthrodesis 8 months earlier in another hospital. The operation was done through a J-shaped volar-radial incision by the conventional method of squaring off and pinning the opposing surfaces of the joint with two Kirschner wires. An iliac bone graft was added. Immobilization in a short arm thumb plaster cast was continued for 6 weeks. Examination at this time demonstrated a painful area of swelling with a palpable thrill, but the patient refused surgical treatment. Because of persistent painful swelling of her right hand 8 months later, the patient was brought to our hospital for another opinion.

Physical examination revealed a tender, 1.5 × 0.5 cm oval, mobile, soft, and pulsatile mass with a palpable thrill at the posterolateral region of the right hand. It disappeared with compression of the radial artery. The venous network of the hand was congested, and results of the Allen test were negative. A radiograph of the hand showed a

successful arthrodesis with the Kirschner wires in place. Humeral arteriography showed a radial artery-cephalic vein fistula with a venous aneurysm (fig. 1). At surgery, the posterolateral region of the hand was explored and a fusiform dilated cephalic vein with arterial connection was identified (fig. 2). No vascular compromise secondary to a protruding Kirschner wire was observed. The fistula and feeding and draining veins were ligated, and the aneurysm was removed. Microscopic examination of the specimen revealed the presence of aneurysmal dilatation of the vein. The patient's symptoms resolved, and she has painless function of the thumb. Three years after the operation the patient remains completely asymptomatic.

DISCUSSION

Traumatic arteriovenous fistulas have been reported as a postoperative complication of orthopedic procedures (1). Traumatic radial arteriovenous fistula is a rare injury, and very few cases have been reported in English literature. Through the Vietnam Vascular Registry, Rich *et al.* (3) analyzed 262 arteriovenous fistulas and reported only two cases involving the radial artery. Ontell and Gauderer (2) reported a case of iatrogenic radial arteriovenous fistula in an infant secondary to multiple arterial punctures. The pathogenesis of arteriovenous fistula has been

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previously reviewed (1). In our case, squaring off and pinning of the opposing surfaces of the trapeziometacarpal joint may have caused partial laceration of the artery and its adjacent vein.

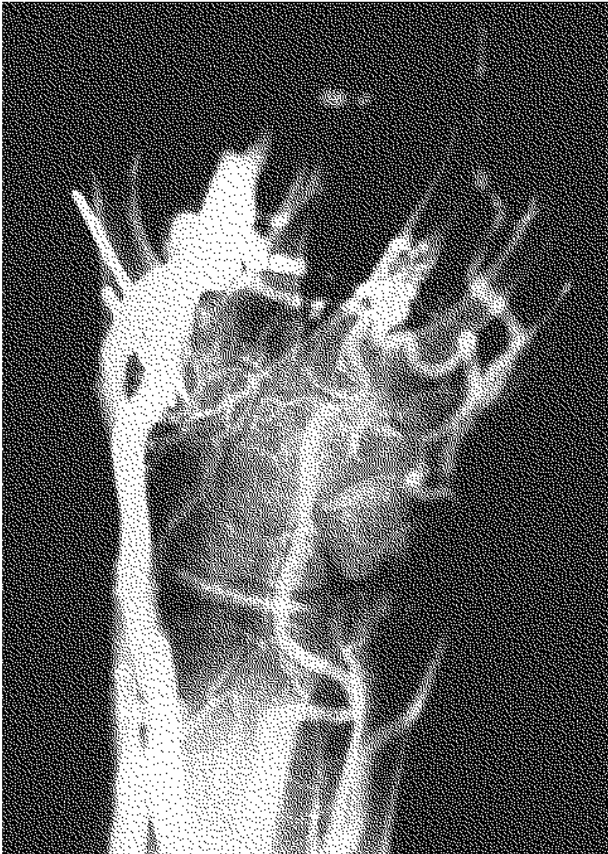


Fig. 1. — Arteriogram showing the radial artery-cephalic vein fistula with venous aneurysm.

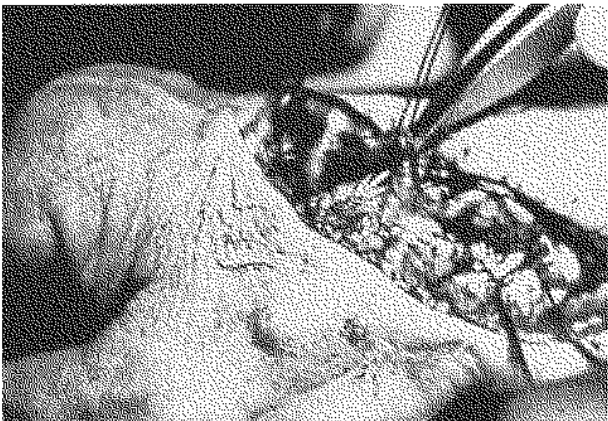


Fig. 2. — Appearance of the fistula and the venous aneurysm at operation.

The purpose of this paper is to draw attention to the potential vascular damage in a trapeziometacarpal arthrodesis which may not become evident until some time after the injury. Awareness of the possibility of vascular injuries and familiarity with their various manifestations will facilitate early diagnosis and prompt operative repair and eliminate many complications.

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SAMENVATTING

J. GUIRAL, M. ORTEGA, J. MANZANARES.
Arterioveneuze fistel met veneus aneurysma als complicatie van een trapezometacarpale arthrodesis.

Beschrijving van een iatrogenetische fistel tussen de arteria radialis en de vena cephalica met veneus aneurysma bij een 55-jarige vrouw, als complicatie van een trapezometacarpale arthrodesis. De klinische diagnose was bevestigd aan de hand van een humerale arteriografie. De fistel werd onderbonden en het aneurysma met succes verwijderd.

RÉSUMÉ

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Fistule artério-veineuse avec anévrisme veineux, complication d'une arthrodesis trapézo-métacarpienne.

Les auteurs présentent un cas de fistule de l'artère radiale et de la veine céphalique avec anévrisme veineux chez un homme de 55 ans, comme complication d'une arthrodesis trapézo-métacarpienne. Le diagnostic clinique fut confirmé par une artériographie humérale. La fistule fut ligaturée et l'anévrisme excisé avec bon résultat.