

IMAGES IN INTERVENTION

Radial Aneurysmal AV Fistula as a Complication of Coronary Angioplasty

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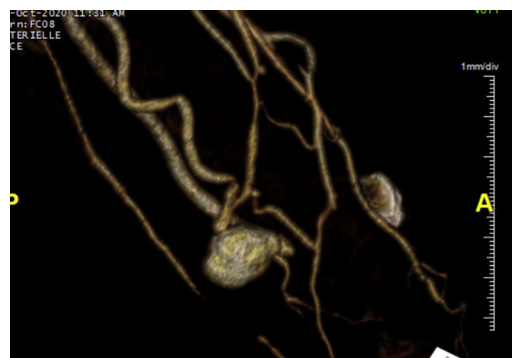
Two years after coronary angioplasty for ST-segment elevation myocardial infarction, a 58-year-old man complained of a painless lump in his right wrist at the puncture site. He did not report any particular symptoms. Physical examination revealed a palpable, pulsatile lump with a continuous murmur on the volar aspect of the patient's right wrist. The lump was not focally tender, and there were no signs of infection or erythema (Figure 1). There were no neurological abnormalities.

Doppler and angiography confirmed the presence of a large aneurysmal arteriovenous (AV) fistula with a flow of 550 ml/min (Figures 2 and 3). Considering the persistent discomfort and the constant increase in size, curative treatment with endovascular sealing or surgery was discussed. Finally, due to the very distal location of the fistula, which was not optimal for covered stent deployment, surgery was scheduled (Figure 4). Resection of the aneurysm was performed with radial arterioplasty as an out-patient procedure. The outcome was uneventful, and radial pulse was recovered.

FIGURE 1 Clinical Status With a Nodule on the Right Wrist



FIGURE 2 3D Reconstruction of the Angiography

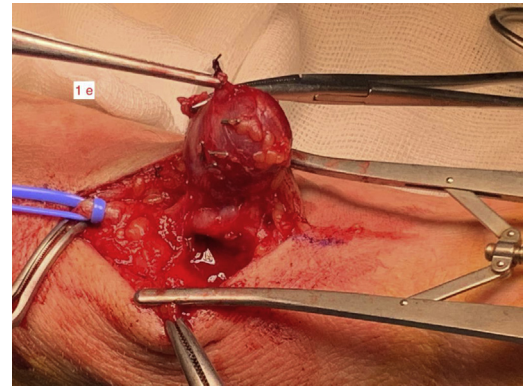


Three-dimensional (3D) reconstruction of the angiography showing the fistula and both the arterial and venous system.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

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FIGURE 3 Angiography Showing the Fistula and Both the Arterial and Venous System**FIGURE 4** Surgical Status With the Aneurysm Being Removed

The incidence of radial AV fistula following percutaneous coronary intervention is extremely rare (1); its presence might be associated with disabling symptoms requiring invasive treatment (2,3) or surgery (4). Very few cases have been

reported (5,6). Various treatment options have to be discussed, including conservative treatment, covered stent implantation, or surgery. The choice of treatment has to take into account the location of the fistula and its flow. Surgery is more invasive but offers a definitive treatment, whereas with the implantation of a covered stent, there is always the risk of a late occlusion. Allowing the fistula to progress can also lead to complications related to its enlargement and to the flow, which is the equivalent of a left-to-right shunt, which is sometimes significant.

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REFERENCES

1. Bhat T, Teli S, Bhat H, et al. Access-site complications and their management during transradial cardiac catheterization. *Expert Rev Cardiovasc Ther* 2012;10:627-34.
2. Sugahara T, Azuma M, Nakashima K, et al. Postcatheterization radial arteriovenous fistula: balloon-assisted direct percutaneous embolization with N-butyl cyanoacrylate and 50% glucose solution in two sessions. *Jpn J Radiol* 2013;31:505-10.
3. Yang JH, Gwon HC, Park JE, Song YB. Arteriovenous fistula of the wrist after transradial coronary intervention. *Heart Lung* 2012;41:203-6.
4. Summaria F, Romagnoli E, Preziosi P. Percutaneous antegrade transarterial treatment of iatrogenic radial arteriovenous fistula. *J Cardiovasc Med* 2012;13:50-2.
5. Regueiro A, Freixa X, Bartolomé Y, Postigo C, Sales S, Falco J. Successful percutaneous treatment of an arteriovenous fistula after radial primary percutaneous coronary intervention. *J Am Coll Cardiol Intv* 2014;7:e123-4.
6. Pascual I, Lorca D, Avanzas P, Hernandez-Vaquero D, Moris C. Arteriovenous radial fistula: a rare and delayed complication of coronary angiography. *J Am Coll Cardiol Intv* 2017;1370-1.

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