European Heart Journal Advance Access published August 20, 2013

CARDIOVASCULAR FLASHLIGHT

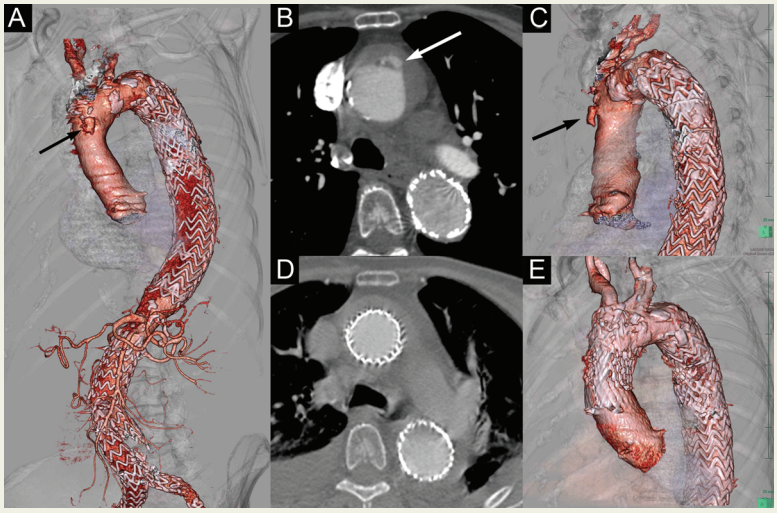
doi:10.1093/eurheartj/eht318

Endovascular treatment of inoperable acute type A dissection via the transapical approach

Frederic Pinaud[1,2]*, Mickael Daligault[1], Bernard Enon[1], and Jean-Louis de Brux[1]

[1]Department of Cardio-Vascular Surgery, University Hospital, 4 rue Larrey, Angers Cedex 09 F-49933, France; and [2]UMR-CNRS 6214, UMR-INSERM 1083, University of Angers, rue Haute de Reculée, Angers Cedex 01 F-49045, France

* Corresponding author. Tel: +33 0241354573, Fax. +33 0241355280, Email: frpinaud@chu-angers.fr



An 83-year-old female patient was admitted to our department for thoracic pain. Her medical history composed of hypertension, atrial fibrillation, two thoracic aortic endoprostheses for penetrating aortic ulcer, an aorto-bi-iliac endoprosthesis for subrenal aortic aneurysm, as well as a right ilio-femoral bypass. (*Panel A*). At admission, the computer tomography (CT) scan showed a dissecting haematoma of the ascending aorta, with heavy calcifications of the aortic arch. The aortic tear was located 1 cm in front of the brachiocephalic trunk (*Panels B* and *C*). Echocardiography revealed a non-compressive pericardial effusion, a normal aortic valve, and good left ventricular (LV) function. A multidisciplinary staff deemed the patient to be inoperable, but determined that the lesions might be accessible using endovascular treatment. The transapical approach, commonly used for transcatheter aortic valve implantation (TAVI), was chosen due to the inaccessible peripheral vessels. Because made-to-measure endoprostheses are inaccessible in emergency situations, two conventional endoprostheses were ordered following the sizing of the ascending aorta, and was made available the following day.

The LV was approached via a left mini-thoracotomy, in accordance with the technique used for TAVI procedures, thereby facilitating sheath introduction. Under rapid pacing, a covered aortic extension (Jotec E-Vita) was released, bordering the brachiocephalic trunk. A large, self-expandable stent (Jotec E-XL) was then applied in order to stabilize the covered endoprosthesis (*Panels D* and *E*). The procedure was a success, and the patient was discharged at Day 8 without any complications.

For inoperable type A aortic dissection without vascular access, the transapical approach, commonly used in the TAVI procedure, offers quick and safe access for the precise release of endoprostheses in the ascending aorta.

CT scan. (*Panel A*) Pre-operative three-dimensional reconstruction of the whole aorta; (*Panels B* and *C*) pre-operative axial and three-dimensional reconstruction of the ascending aorta showing aortic tear (arrow); (*Panels D* and *E*) post-operative CT scan with the two endoprostheses.