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Quentin Pellenc, Yves Castier

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1 **Aortic arch false lumen embolisation**
2 **in a residual chronic type A aortic dissection**

3

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5 Quentin PELLENC^{1,2}, Yves CASTIER^{1,2}

6 Vascular Surgery Department¹, Bichat Hospital, Assistance Publique –Hopitaux de Paris
7 (AP-HP)

8 Paris-Diderot University², Paris 7, France

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14 **Corresponding author:**

15 Quentin Pellenc, MD

16 Service de Chirurgie Vasculaire, Thoracique et Transplantation Pulmonaire

17 Hôpital Bichat, 46 rue Henri Huchard, 75877 Paris Cedex 18, France

18 Tel: +33 140257565 Fax : +33 140256102

19 e-mail : quentin.pellenc@aphp.fr

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1 **Introduction**

2 After open repair of acute type A dissection, aneurysmal degeneration of thoracic
3 aorta occurs in 40% of patients. ~~Recommended treatment remains open repair~~ Open
4 ~~repair remains recommended treatment~~, but endovascular repair such as branched
5 stentgrafts, hybrid repair and false lumen (FL) embolisation can be considered. FL
6 thrombosis appears to be a favourable prognostic factor and decrease aortic-related
7 mortality. Targeted FL embolisation increases aortic remodelling in chronic aortic
8 dissection. It can be achieved with many devices such as coils, iliac occluders, or custom-
9 made stent-grafts. Stent-grafting of entry-tears is also described but could not be applied
10 in our case ~~regarding due to~~ the location of the entry-tears. We describe a percutaneous
11 technique to achieve aortic arch FL occlusion in a 64-year-old woman with a 57mm
12 aortic arch aneurysmal degeneration (figure 1A), 3 years after supracoronary graft
13 replacement (initial diameter: 41mm). The presence of only two thoracic entry-tears,
14 and the small diameter of the patent part of the FL, allowed us to proceed to FL closures
15 and promote aortic remodelling.

16

17 **Technique**

18 The ~~S~~secondary entry tears were observed at the end of the innominate artery
19 (IA), at the level of the right renal artery and both iliac arteries. Only one intercostal
20 artery arose from the FL (level T7). Under local anaesthesia, the right iliac re-entry tear
21 was catheterised through a ~~retrograde-femoral~~ transfemoral approach (figure 2B)
22 allowing FL guide wire placement up to the IA. Angiography confirmed the FL flow
23 between the IA and the distal descending aorta. The intercostal artery was embolised
24 with two 8x10mm Interlock micro-coils (Boston Scientific, Natick, MA). A 22mm type 2
25 Amplatzer Vascular Plug (AVP) (Abbott Vascular, Santa Clara, CA) was landed in the FL

1 close to entry-tear. Distal occlusion was performed by delivering a 18mm AVP in the
2 mid-thoracic aortic FL. The 6-months-follow-up CT-scan showed complete thoracic FL
3 thrombosis (figure 2) and main aortic diameter decreased to 53mm.

4

5 **Conclusion**

6 In case of particular anatomy as this patient, plug embolisation of the FL can be
7 performed in residual chronic type A aortic dissection and could be considered to treat
8 aneurysmal degeneration.

9

10 **Figures Legends Legend**

11 **Figure 1:** Preoperative CTA with aortic arch dilatation and a partially thrombosed false
12 lumen along aortic arch and thoraco-abdominal aorta (A). Angiography showing distal
13 re-entry tears for catheterisation (B, white arrow). TL: True lumen; FL: False lumen.

14

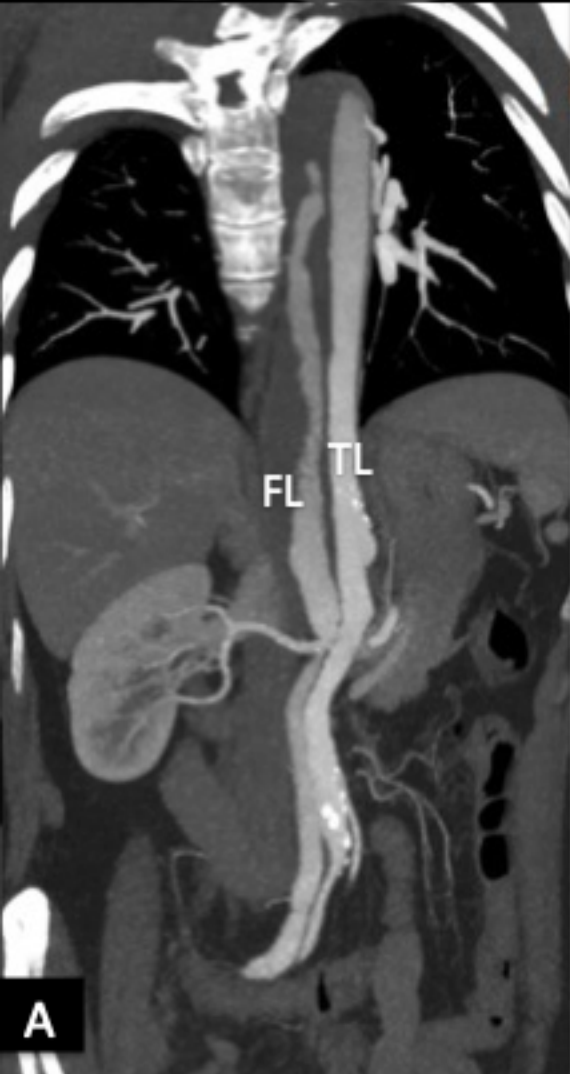
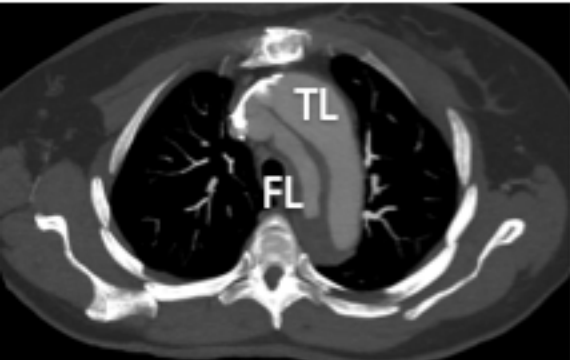
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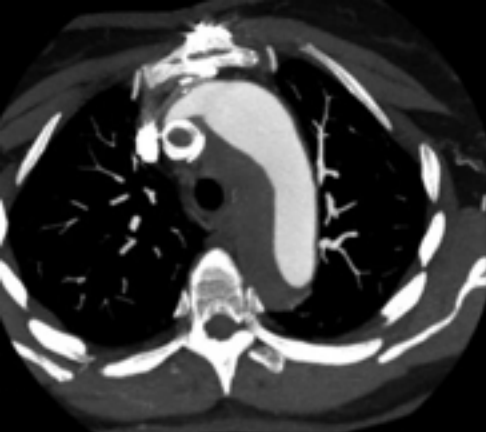
16 **Figure 2:** Postoperative CT-scan with complete thrombosis of the thoracic false lumen.
17 Axial and coronal views (A). Volume rendering technique view (B). Proximal vascular
18 plug (downward pointing white arrow). Distal vascular plug (upward pointing white
19 arrow). Supracoronary graft (white *).

20

21

22





A



B