



Case Report

Successful interventional management of postoperative hemorrhage in total arch replacement of type A aortic dissection



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ABSTRACT

We reported a 48-year-old male patient with postoperative hemorrhage. Given his frailty, emergent interventional procedures were successfully performed and the end of the left subclavian artery was embolized by four coils. Our report provided a new therapeutic approach regarding the frail patients presenting postoperative hemorrhage.

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1. Introduction

Postoperative hemorrhage is a severe complication and has negative effects on the prognosis. Type A aortic dissection is a lethal disease, which may need total arch replacement and elephant trunk implantation.¹ However, postoperative hemorrhage significantly alters the recovery process and prognosis of the patient. Open surgery is widely used for postoperative hemorrhage. However, given that the postoperative weak condition and primary surgery-induced damages, patients with postoperative hemorrhage take much higher risk to receive open surgery. Therefore, in the present case report, we introduce our experience about interventional management of postoperative hemorrhage after total arch replacement and elephant implantation of type A aortic dissection.

2. Case report

A 48-year-old male patient with type A aortic dissection underwent total arch replacement and elephant trunk implantation combined with left subclavian artery bypass.² The postoperative period was uneventful, and he was discharged on the 10th postoperative day. On the 35th postoperative day, the patient was re-admitted for high fever (40.2 °C), cough, shortness of breath, and sternal instability. Laboratory results were normal except for

an increased leukocyte count (16,500/mm³, 92% neutrophils). Exploratory thoracotomy was performed along with debridement and antibiotic therapy. The patient was fully recovered and discharged in an afebrile state on the 28th day after this surgery.

On the 38th day after the second operation, the patient was re-admitted because of chest pain, dyspnea, and wound dehiscence at the suprasternal fossa along with bleeding from the wound. Contrast-enhanced computed tomography could not identify the location of the bleeding. Since two operations had already been performed, re-operation was considered to carry unacceptably high risk due to the weak condition of the patient. Therefore, an interventional procedure was considered for exploring and closing the bleeding point. A pigtail catheter was inserted via the right common femoral artery and advanced toward the ascending aorta. The angiogram revealed that the suspected bleeding point was located at the broken ends of the left subclavian artery, which was ligated in the first operation (Fig. 1A). Another pigtail catheter was then inserted via the left radial artery and advanced to the broken ends of the left subclavian artery, confirming the location of the bleeding as well (Fig. 1B). The end of the left subclavian artery was embolized by four coils via the catheter in left radial artery (Fig. 2). The patient was discharged on the 14th postoperative day with complete wound healing and no further chest pain or dyspnea. The patient remained stable without any sign of recurrence 3 months after discharge.

3. Discussion

Open surgery is currently advocated for the treatment of postoperative hemorrhage.³ However, open surgery is challenging

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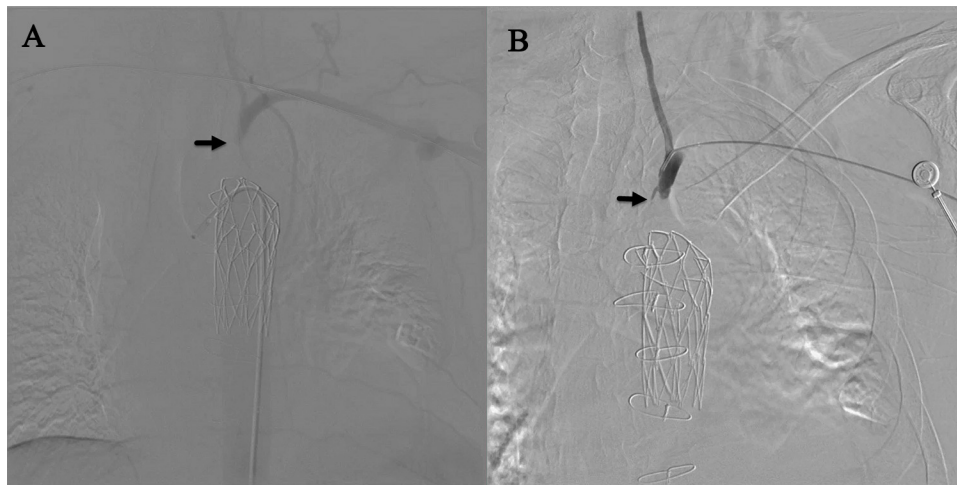


Fig. 1. (A) The suspected bleeding point detected by arteriography located at the broken ends of the left subclavian artery that was ligated in the first operation (arrow). (B) Pigtail catheter inserted via the left radial artery approached the broken ends of the left subclavian artery, confirming the location of the bleeding by arteriography (arrow).

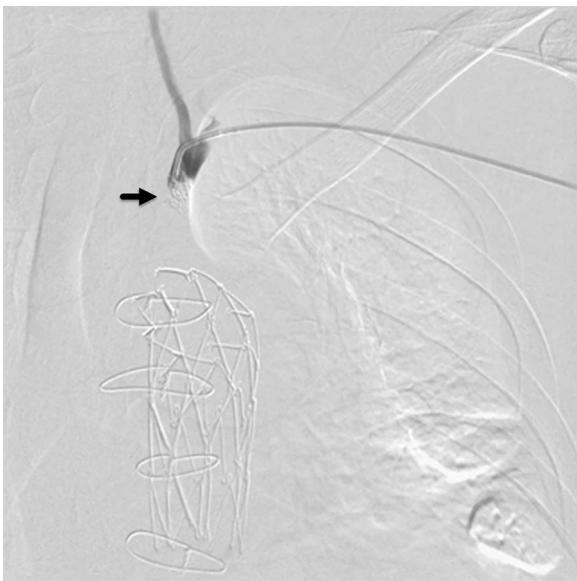


Fig. 2. The bleeding end of the left subclavian artery was embolized by coils through arteriography (arrow).

and multiple reoperations can carry unacceptably high risk, particularly for frail patients. Interventional management can be a supplemental choice for certain patients who are at high risk with

open surgical procedures. Our report provides useful reference for making practice decision when postoperative hemorrhage occurs.

Conflicts of interest

The authors have none to declare.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ihj.2016.05.014](https://doi.org/10.1016/j.ihj.2016.05.014).

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