

## INTERVENTIONAL ROUNDS

# Conservative Management of Iatrogenic Type a Aortic Dissection Occurring During Percutaneous Coronary Intervention

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## ABSTRACT

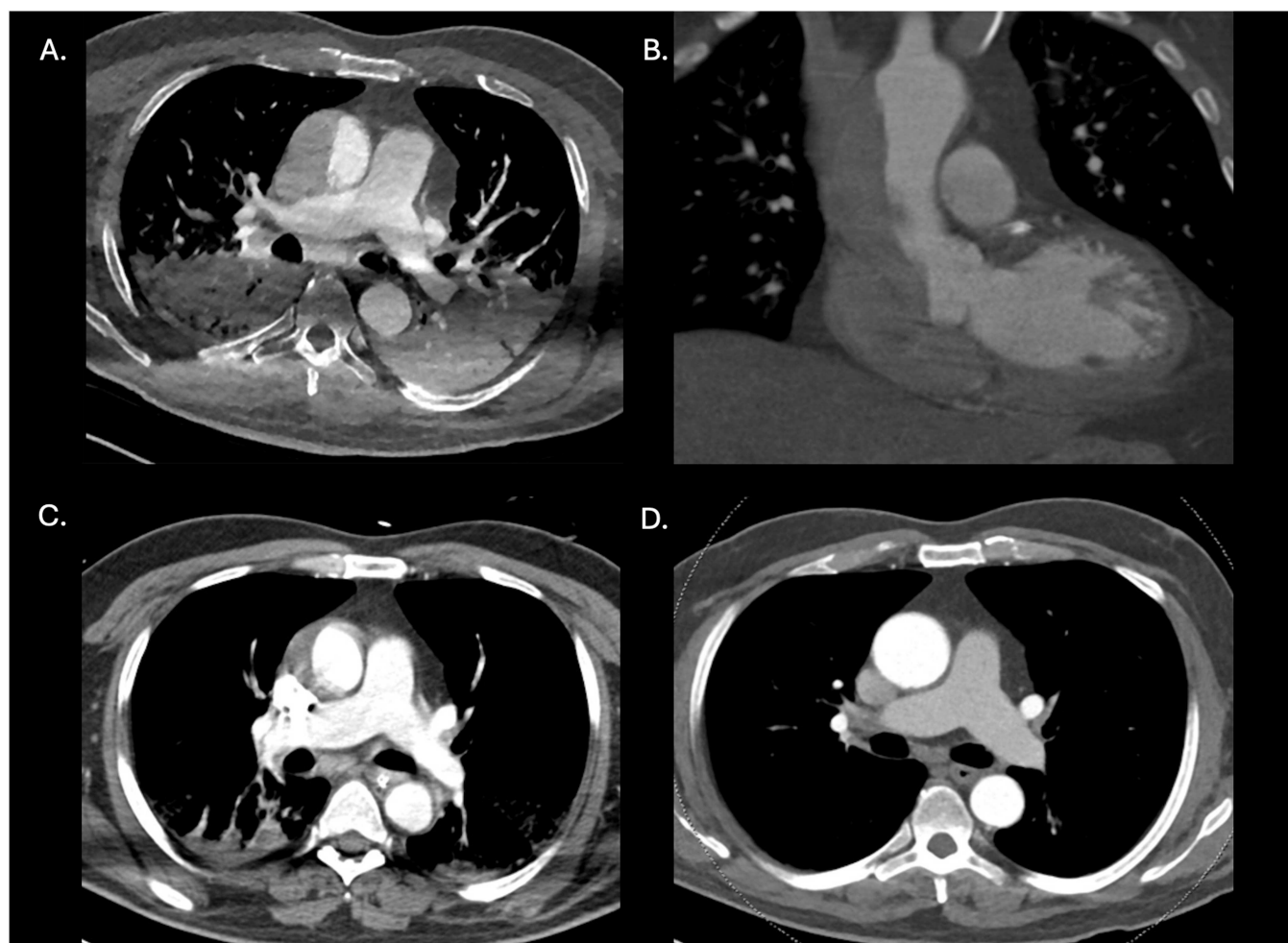
**Background:** Iatrogenic type A aortic dissection (TAAD) during percutaneous coronary intervention (PCI) is a rare but life-threatening complication, usually managed surgically.

**Case presentation:** We report the case of a 59-year-old patient who developed an ascending aortic dissection extending to the proximal arch during left circumflex (LCX) chronic total occlusion (CTO) recanalization. Stenting of the LCX and left main coronary artery successfully sealed the entry site and stabilized the patient. Computed tomography revealed a false lumen occupying 51% of the aortic diameter, without involvement of supra-aortic branches. Conservative management was initiated with strict anti-impulse therapy and staged dual antiplatelet therapy. At 24 h, the false lumen regressed to 37%, with complete resolution by Day 7.

**Conclusion:** In selected cases of iatrogenic TAAD during PCI, conservative management following successful sealing of the entry tear may represent a safe alternative to surgery.

We report the case of a 59-year-old patient who underwent coronary angiography for exertional angina and a high coronary calcium CT score. The patient had a chronic total occlusion (CTO) of the proximal left circumflex artery (LCX). Given the symptoms and the absence of myocardial sequelae on the echocardiography, percutaneous recanalization of the LCX CTO was proposed and accepted by the patient. A microcatheter and a guide extension catheter were used to enhance support during the procedure. The intracoronary manoeuvring of the materials led to dissection of the LCX proximal to the CTO, with extension toward the left main (LM) and subsequently to the ascending aorta, reaching the aortic arch. The patient became hemodynamically unstable, resuscitation manoeuvres were performed whilst we stented the proximal LCX and the LM toward left anterior descending artery, as such closing the entry site of the aortic dissection. The patient stabilized hemodynamically, and a CT scan was performed showing type A aortic

dissection with a large false lumen of a maximal diameter of 24 mm (Figure 1A,B). After discussions with the cardiac surgery team, given that the entry site of the dissection appeared closed, we opted for conservative management of the aortic hematoma. This strategy was considered appropriate as there was no pericardial effusion or tamponade, no evidence of aortic insufficiency on echocardiography, and no extension of the dissection toward other coronary ostia causing myocardial ischemia. Medical therapy included standard anti-impulse management with strict blood pressure and heart rate control to minimize aortic wall stress. The dual antiplatelet therapy (DAPT) required by the coronary stenting consisted of aspirin and intravenous eptifibatide during the first 24 h to allow the option of emergent surgery if required. After 24 h, repeat CT imaging showed a clear reduction in the false lumen size (from 51% of total aortic diameter at baseline to 37%) (Figure 1C), and DAPT was switched to aspirin and clopidogrel. The following week,



**FIGURE 1** | Evolution of the iatrogenic type A aortic dissection over 1 week. (A) Immediate post-PCI CT showing a false lumen occupying 51% of the aortic diameter. (B) CT from the same timepoint showing distal extension to the proximal aortic arch, without supra-aortic branch involvement. (C) CT at 24 h demonstrating reduction of the false lumen to 37%. (D) CT at Day 7 showing complete resolution.

the patient had a total of 4 CT scans that showed a progressive regression of the aortic hematoma diameter, until complete resorption (Figure 1D). The patient stayed less than a week in the intensive care unit, and 2 years later, he is doing well. This case illustrates the option of conservative management of ascending aortic dissection complicating percutaneous coronary intervention, as long as the entry site is firmly sealed by stenting. There are other cases reporting such a complication, however more often than not, surgical management is opted [1–3].

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## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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