

Delayed Surgical Repair of Acute Type A Aortic Dissection with Concurrent Stroke

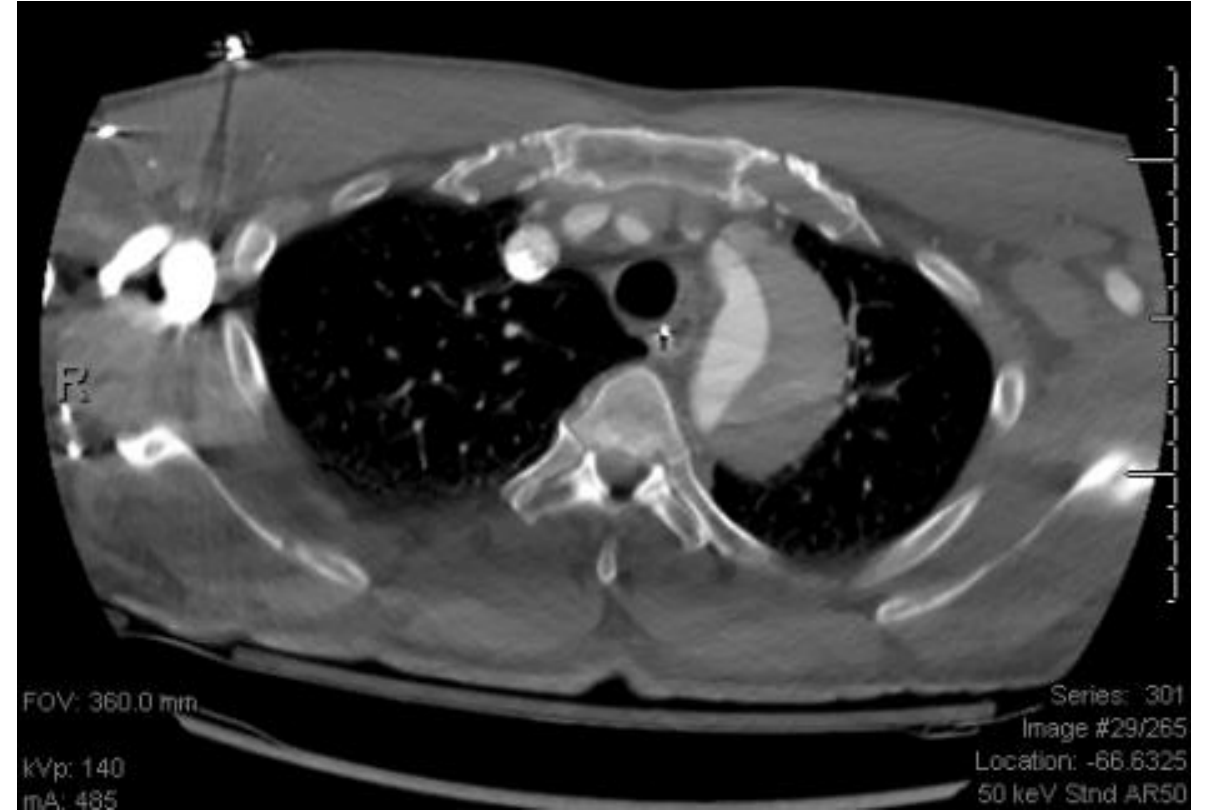
Objective

- Immediate vs delayed repair of acute Type A Aortic Dissection (ATAAD) with concurrent stroke in the absence of severe aortic insufficiency (AI) or aortic rupture is controversial
- We report 2 cases of successful delayed repair of ATAAD with concurrent stroke

Patient 1:

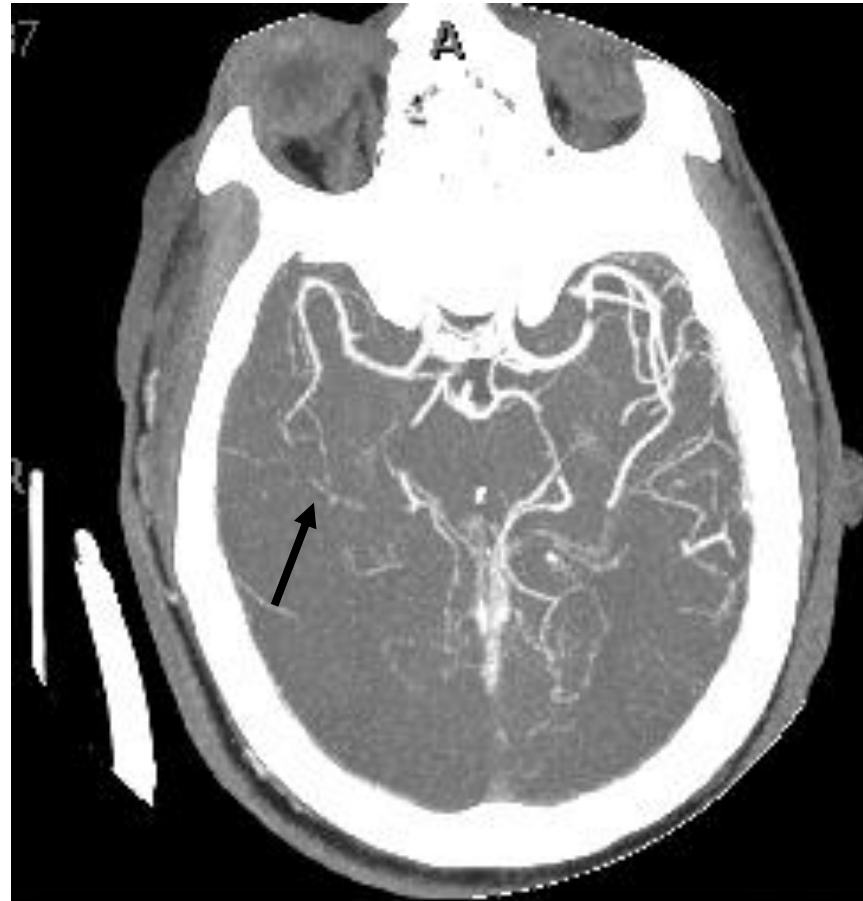
- 60 y/o male with history HTN presented in an unresponsive state with right gaze deviation
- CTA revealed ATAAD from the sinotubular junction extending into right and left carotid arteries with decreased perfusion to frontoparietal brain regions
- Brain MRIs showed acute infarcts in the left hippocampus, cerebellum, and basal ganglia

Patient 1: CT Angiogram Chest Abdomen Pelvis



CTA showing TAAD extending from aortic root into right and left carotid arteries

Patient 1: CT Angiogram Head Neck



CTA showing attenuation of right sylvian MCA branches due to thrombosis

Patient 1: Course

- Due to significant neurological deficits, increased risk of hemorrhagic conversion, and absence of severe AI or pericardial effusion on echocardiogram, surgery was delayed, and the patient was treated with anticoagulants and strict blood pressure control
- Patient was discharged with residual left-sided hemiplegia following improvements in mental status, and was taken for surgery in an outpatient consultation 2 months later
- The patient underwent proximal aortic repair with bypasses to the bilateral carotid arteries using a trifurcated graft
- Operative management included right common femoral artery cannulation, deep hypothermic circulatory arrest (DHCA) and retrograde cerebral perfusion

Patient 2:

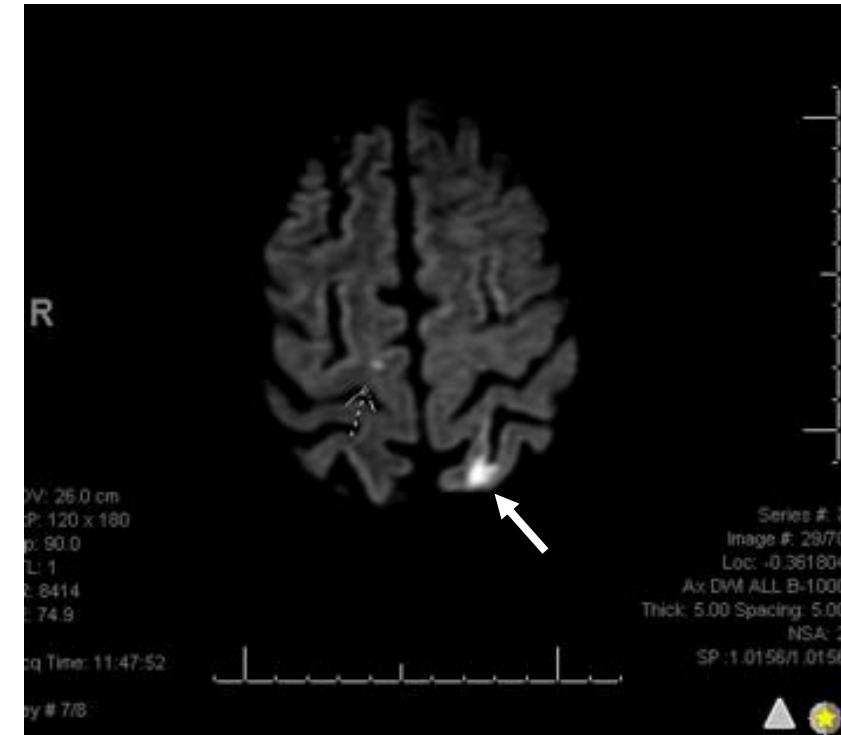
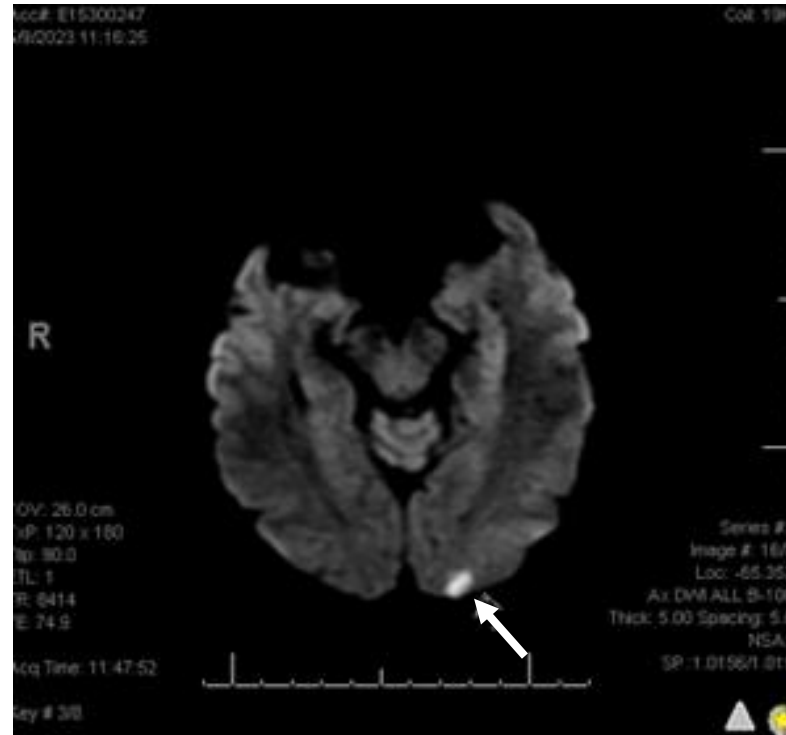
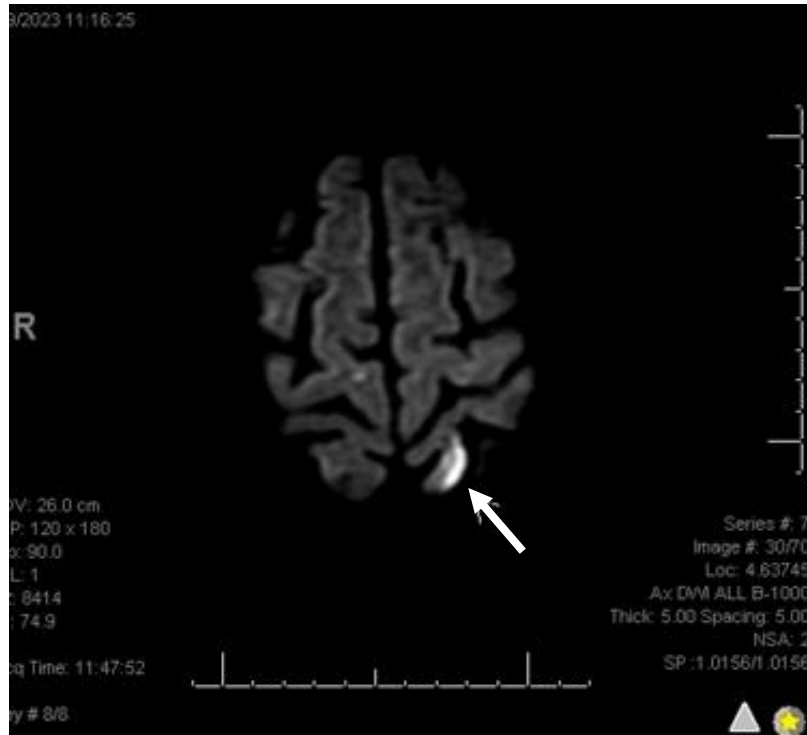
- 63 y/o male with history of HTN, recurrent strokes and bicuspid aortopathy requiring aortic valve replacement
- Patient presented with altered mental status, aphasia, and new onset right-sided hemiplegia
- CTA revealed ATAAD extending from aortic root extending into innominate, left carotid, and left subclavian artery
- Brain MRI revealed scattered ischemic infarcts within left cerebral hemisphere

Patient 2: CT Angiogram Chest Abdomen Pelvis



CTA showing TAAD extending into innominate, left carotid, and left subclavian artery

Patient 2: Brain MRI



Brain MRI showing scattered infarcts in left hemisphere

Patient 2: Course

- Repeat CTA revealed partial false lumen thrombosis of proximal root dissection, leading to a delay in surgical intervention
- 5 months later, patient was reevaluated for surgery and approved due to complete resolution of stroke symptoms
- Interval CTA showed aortic dilation from 5.0 cm to 6.5 cm
- The patient underwent proximal aortic repair and left carotid artery bypass
- Operative management included reoperative sternotomy, right subclavian cannulation, DHCA, and antegrade cerebral perfusion

Results

- Patient 1 and patient 2 were discharged to rehab on POD#21 and home on POD#11 respectively without surgical complications

Conclusion

- When the risks of surgery, such as permanent neurological damage or hemorrhagic conversion outweigh the benefits, delayed repair of ATAAD with stroke can be an effective and safe approach