

# Case Report: Left common carotid urgent reperfusion after inadvertent TEVAR coverage

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## Introduction

Thoracic endovascular aortic repair (TEVAR) has become a common repair option for complicated or high-risk type B aortic dissections. Complications requiring urgent repair include visceral, spinal, or lower extremity malperfusion, rupture, or refractory hypertension/pain. When placing a TEVAR device it is critical to cover the entry tear and the extent of the proximal dissected aorta to land the device in dissected free territory. Precise landing is key in this intervention and can be very challenging given the angulation of the thoracic aorta as well as dynamic nature of this area. Inadvertent landing more proximal or distal can result in failure to cover the entry tear putting patient at risk for retrograde type A dissection and other serious morbidities.

This case report describes a patient with inadvertent coverage of the left common carotid artery during TEVAR for a complicated subacute type B aortic dissection. Inadvertent arch vessel coverage is a rare complication which may require prompt intervention.

## Case Description

36-year-old male presented with chest pain and hypertensive emergency. CTA demonstrated type B 3-11 aortic dissection, deemed uncomplicated. Patient was medically managed with anti-impulse control. However, during the acute phase patient developed uncontrolled hypertension and pain, repeat CTA demonstrated increased false lumen diameter and retrograde propagation of dissection (figure 1). Therefore, patient was offered TEVAR with left subclavian coverage followed by laser fenestration.



Figure 1

## Intervention

Patient was taken to the operating room day 13 after presentation. Patient placed under general anesthetic. Open left brachial access was obtained. The bilateral common femoral arteries were percutaneously accessed, and true lumen access was confirmed. Patient was systemically heparinized for goal ACT >250. Aortogram and intravascular ultrasound were used to confirm correct position within true lumen as well as appropriate graft sizing.

Initial covered stent was placed as planned just distal to the level of the left subclavian artery with plan for proximal extension using a second piece. The next covered stent was then deployed. Aortogram obtained. At this time, it was noted the proximal stent covered 70% of the left common carotid artery (CCA).

We were able to obtain intraluminal wire access around the proximal extent of the TEVAR into the left CCA via femoral access using a vert catheter as well as a floppy Glidewire. 7 French sheath advanced into the common carotid over a Rosen wire. 8 mm VBX stent placed within the CCA however distal migration of the stent was noted. Repeat aortogram demonstrated diminutive flow within the left CCA therefore an additional 8 mm VBX stent was deployed with similar issue. We then elected for a bare metal balloon expandable stent with the Omnilink. Aortogram demonstrated improved filling of common carotid artery (figure 2).

Left subclavian laser fenestration performed in a standard fashion without complication. Repeat aortogram was then performed confirming normal antegrade perfusion into a widely patent left CCA and left subclavian artery (figure 3). Distal uncovered bare metal stents were deployed. Completion aortogram was then performed at this time with satisfactory result. On post-operative CTA, good distal opacification of contrast also noted within the arch vessels (figure 4).

## Results



Figure 2

## Discussion

Although rare, unplanned coverage of the arch vessels can be catastrophic. Prompt revascularization is essential. Many techniques have been employed in the past. In our case the left common carotid artery was successfully cannulated via femoral access, this was possible given only 70% coverage of the common carotid artery. With complete coverage wire access may not be obtainable and therefore cutdown with bypass or stent graft fenestration and subsequent stent placement may be viable options. Some have used Coda balloon for retraction of the deployed stent graft. With wire cannulation in these situations, one must be vigilant not to cause a retrograde type A dissection. Regardless of technical approach to salvage a covered branch, bail out for this complication should always be considered prior to intervention.

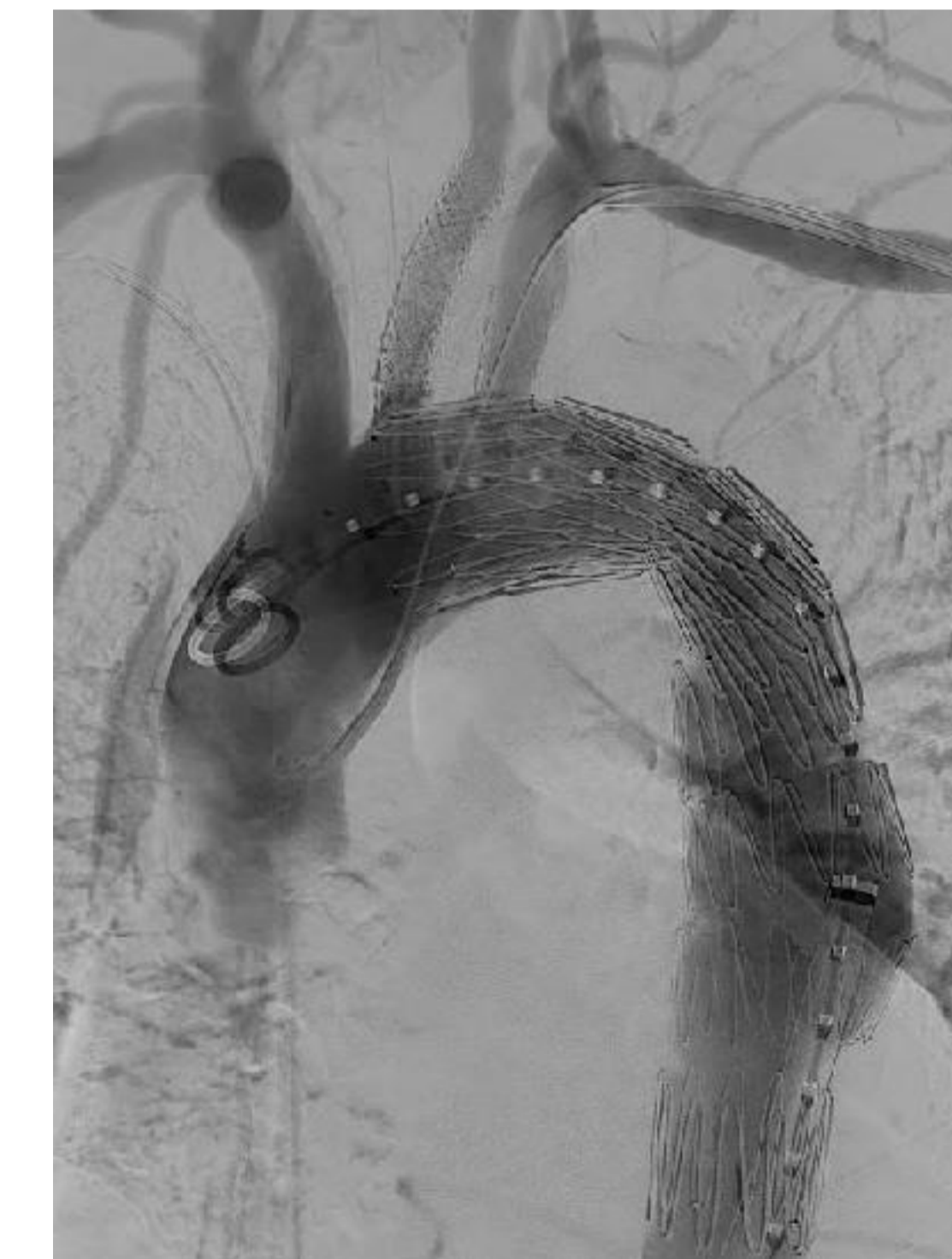


Figure 3

## References

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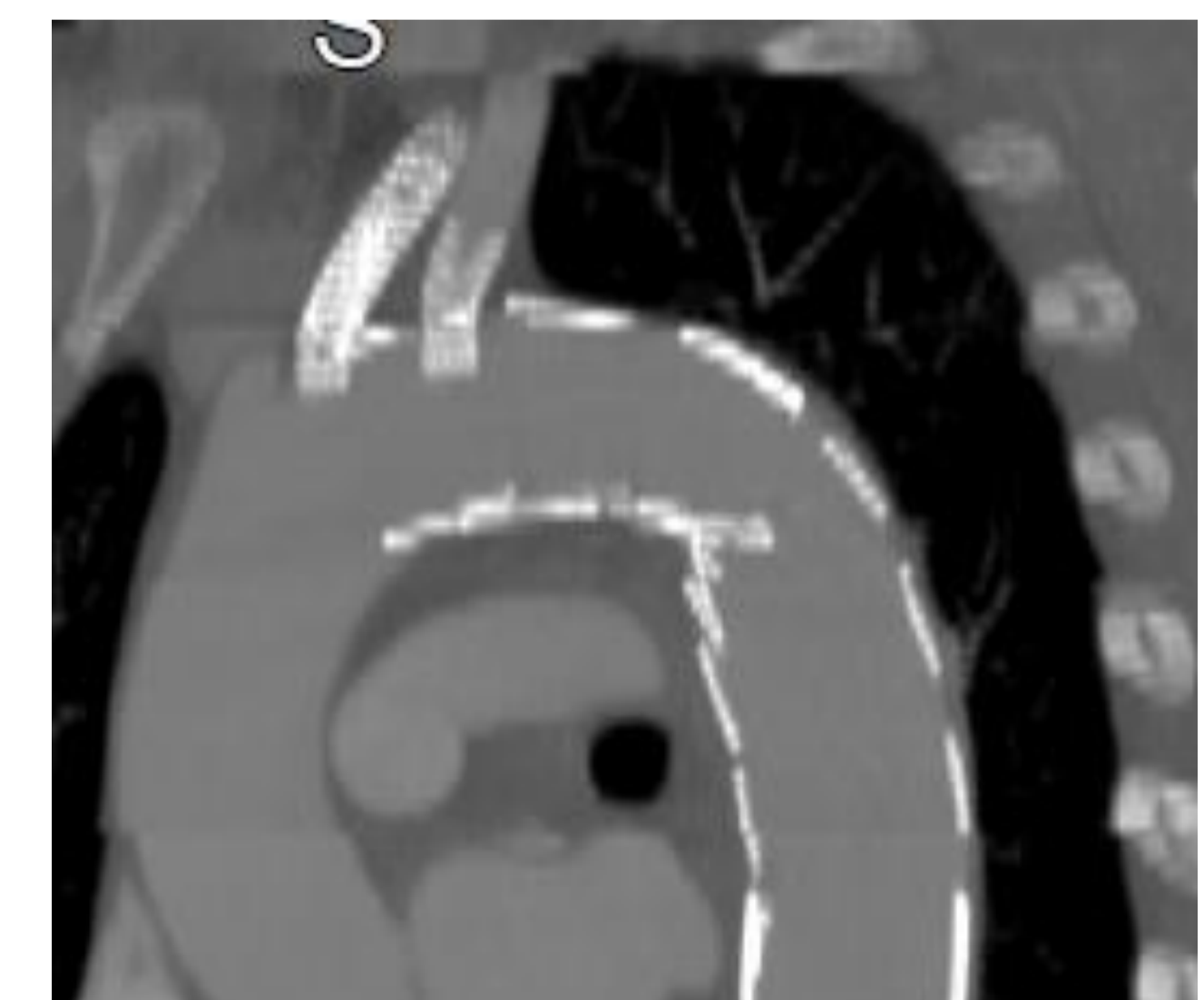


Figure 4