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## SHORT REPORT

# A Chip Off The Old Block!

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*A 35 year old male presented 9 months after sustaining a penetrating injury to the neck with a false aneurysm of the common carotid artery (CCA). At exploration, a 5mm piece of granite was embedded in the posterior wall of the CCA with overlying endothelialisation. He was treated with segmental resection and an interposition vein graft. Apart from the risk of foreign body embolisation at the time of the original presentation, it seems remarkable that the patient did not suffer a stroke due to embolism of thrombus that one would normally have expected to form on the highly thrombogenic stone surface.*

*Keywords: Carotid; Trauma.*

### Case Report

A 35 year old male was breaking up concrete with a mechanical digger when a piece of shrapnel struck him on the right side of the neck. A very large neck haematoma developed immediately and he was admitted to a peripheral hospital for treatment. A plain X-ray indicated the presence of “a foreign body in the right side of the neck adjacent to the thyroid cartilage”. A decision was taken to treat him conservatively and as the haematoma did not expand further, he was discharged home four days following admission. No referral was made at any time to local or regional vascular services.

Nine months later (the reason for the delay remains unclear), he was finally referred onto the Ear Nose and Throat Department and then the Vascular Unit in Leicester after CT scanning confirmed that the foreign body was still present and located very close to the carotid sheath. The patient had been entirely asymptomatic following discharge and there were no abnormal clinical findings. Duplex ultrasound (Fig. 1) revealed a 1cm diameter false aneurysm on the anterior aspect of the proximal common carotid

artery (CCA), with a foreign body clearly lodged in the posterior wall of the vessel and closely aligned to the intimal surface.

At operation, the anterior false aneurysm and posterior foreign body were resected and an interposition vein graft inserted. Upon opening the resected specimen, the entry site into the false aneurysm was clearly evident (Fig. 2). Posteriorly, there was an *endothelialised* defect in the wall of the CCA which contained the foreign body. The foreign body was found to be a stone chip measuring 6×4mm. He made an uneventful recovery.

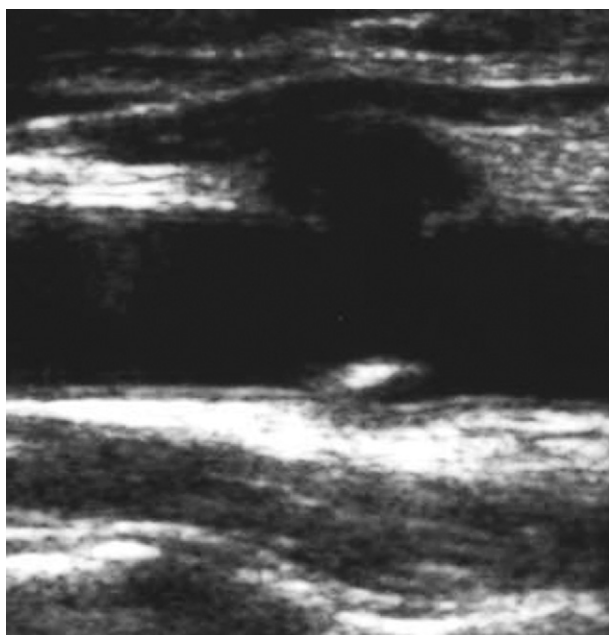
### Discussion

Penetrating neck injuries are relatively rare<sup>1</sup> and about 17% are associated with injury to the major extracranial vessels,<sup>2</sup> some of which may become clinically apparent for up to a year.<sup>1</sup> Vascular injuries in the neck have been classified by Monson to be Zone 1 if located below the sternal notch, Zone 2 if situated between the sternal notch and the angle of the mandible and Zone 3 if the arterial injury lies between the mandible and skull base.<sup>3</sup> Not surprisingly, vascular injuries in zones 1 and 3 carry the highest morbidity and mortality.<sup>1</sup>

The current patient clearly suffered a zone 2 injury, manifested by the rapid development of a massive

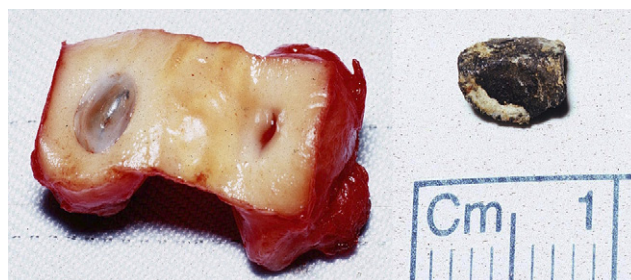
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**Fig. 1.** B-mode image of common carotid artery. There is a 1 cm false aneurysm on the anterior aspect of the vessel wall with a foreign body closely related to the intima on the posterior wall.

neck haematoma. Although it is generally accepted that angiography is not routinely mandated in zone 2 injuries,<sup>1</sup> he should have undergone a Duplex ultrasound (following admission) so as to exclude a vascular injury. The presence of the haematoma and the foreign body on plain X-ray should have alerted the supervising clinicians that an injury was highly likely. If there was no obvious carotid injury on Duplex, it would have been reasonable to manage him conservatively.<sup>2</sup> However, given the findings at surgery 9 months later, it is almost certain that an immediate Duplex would have revealed the false aneurysm and prompted more urgent vascular referral.



**Fig. 2.** Resected specimen. The entry site on the anterior wall is clearly visible. Posteriorly, there was an endothelialised foreign body. Upon opening, the foreign body was found to be a 6 mm diameter piece of granite.

Notwithstanding the inappropriate delay to referral, the most notable observation is the fact that by the time of surgery, the foreign body was completely fixed and *endothelialised* within the luminal surface of the CCA. Apart from the risk of foreign body embolisation at the time of the original presentation, it seems remarkable that the patient did not suffer a stroke due to embolism of thrombus that one would normally have expected to form on the highly thrombogenic stone surface!

## References

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