PULSING STAPLES; A CASE REPORT OF SUPERFICIAL TEMPORAL ARTERY PSEUDOANEURYSM AND LITERATURE REVIEW OF THE SAME

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Background

- Arterial pseudoaneuryms occur from local intimal trauma to the arterial wall which creates a local collection of blood contained by the surrounding tissue.
- Unlike a true aneurysm, a pseudoaneurysm does not contain any layer of the vessel wall.
- Most commonly occur in the femoral artery after traumatic arterial cannulation; however, these can occur in any arterial vessel.
- We describe a case of a pseudoaneurysm of the right temporal artery that occurred secondary to a temporal scalp laceration sustained during a motor vehicle accident.

Clinical Course

- 24 year old male presented to the emergency department after sustaining two separate right parietal-temporal scalp lacerations which were repaired primarily with staples.
- The patient sustained other orthopedic injuries and a moderate grade superior pole splenic laceration along with the scalp lacerations. He was admitted to the surgical trauma intensive care unit. He had an otherwise unremarkable hospital course and was discharged.
- Two weeks later, the patient was seen in the emergency department with a 2 x 1 cm pulsatile mass underneath the staples around the previous laceration repair (Photo 1). Point of care ultrasound was then utilized to evaluate the area and revealed a 3cm x 1cm x 1cm anechoic area with pulsatile blood flow and communication to the temporal artery.
- The patient was taken to the operating room where, under ultrasound guidance, 2500 Units of thrombin was injected into the pseudoaneurysm.
- An open temporal incision was made and the two halves of the temporal artery was dissected, ligated and removed.
- The patient had a head and neck CT angiography one month later that demonstrated complete resolution of the pseudoaneurysm.

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Results

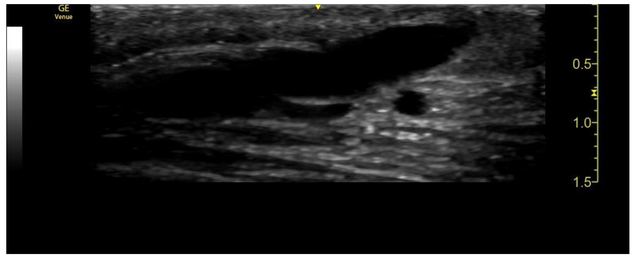

Figure 1: Point of care US of pseudoaneurysm.

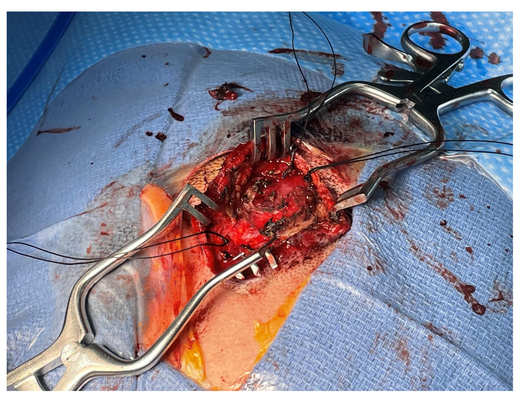

Photo: Intraoperative photograph of both the excised pseudoaneurysm and proximal and distal control of temporal artery.

Discussion

- When blood leaks through a disrupted arterial wall, a pseudoaneurysm forms.
- The treatment of a pseudoaneurysm is dependent on the area in which the aneurysm occurs.
- Angiography is the gold standard in diagnosis but the prevalence of point of care ultrasound and accessibility makes it optimum diagnostic tool which can even be performed bedside in almost any venue.
- The classic sign of bidirectional flow can resemble a “yin-yang” in a doppler mode on the US (Figure 1).
- There have been proposed treatments to include US compression but most symptomatic pseudoaneurysms can undergo US guided thrombin injection 100-1000 IU/ml
- Typically, the literature describes traumatic pseudoanyeursms from vascular interventions and femoral access; however, this case is unique as the traumatic event was likely a combination from blunt scalp trauma combined with primary staple repair of the scalp laceration.

- Photo 1: Pulsing staples

Conclusion

- This case report seeks to explain the etiology, clinical findings, potential consequences and surgical management of temporal artery pseudoaneurysms.

References

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