

Case Report

Massive Hematoma after a Rupture of the Descending Scapular Artery: Case Report

Schepens I¹ and Smeets L^{2*}

¹Department of Medicine, Radboud University Nijmegen, Netherlands

²Department of Vascular Surgery, Rijnstate Hospital Arnhem, Netherlands

***Corresponding author:** Luuk Smeets, Department of Vascular Surgery, Rijnstate Hospital Arnhem, Netherlands

Received: July 22, 2016; **Accepted:** September 06, 2016; **Published:** September 13, 2016

Abstract

Background: Rupture of the Descending Scapular Artery (DSA) is extremely rare and only reported after trauma.

Clinical Presentation: An 87-year-old man was diagnosed with a massive hematoma on his right hemithorax due to a rupture of the DSA. Several months earlier he was diagnosed with a distal clavicle fracture on the right side.

Physical examination showed a tremendous recent hematoma on his right hemi thorax, 25x20 cm continuing on his back, and heavy pain around his scapula and clavicle. The blood pressure on arrival is 104/57 mmHg and drops to 70/40 mmHg with a heart rate of 80 b/m. Blood results showed a hemoglobin of 4.4 mmol/L (8.4-10.8). The CT-scan showed a massive subscapular hematoma at the right thorax.

Intervention: Endovascular coiling failed because the target vessel could not be catheterised and stenting the thyrocervical trunk without sacrificing the vertebral artery wasn't feasible. An open procedure was successfully performed with an incision in the posterior triangle of the neck to ligate the thyrocervical trunk.

Conclusion: Massive hematoma after a rupture of the descending scapular artery is a rare diagnosis. If an endovascular strategy fails a direct surgical approach with is a good alternative. Furthermore evacuation of the hematoma is mostly indicated to prevent skin necrosis.

Keywords: Descending scapular artery; Hematoma hemi thorax; Endovascular procedure; Surgical ligation

Case Report

The Descending Scapular Artery (DSA), also known as the Dorsal Scapular Artery, is a branch of the subclavian artery [1]. Sporadically the DSA branches from the Transverse Cervical Artery (TCA) [2]. The rhomboid muscles, the levator scapulae muscle and the lower part of the trapezius muscle are supplied by the DSA [1,3]. Rupture of the DSA is extremely rare and only reported after trauma.

An 87-year-old man presented at the Emergency department after his physiotherapist found a hematoma on the right thorax. Several months prior the patient was diagnosed with a distal clavicle fracture on the right side (Figure 1). Relevant medical history consisted of hypertension, atrial fibrillation, mitral valve insufficiency, renal insufficiency and use of acetylsalicylic acid. Physical examination showed a tremendous recent hematoma on his right hemithorax, 25x20 cm continuing on his back and heavy pain around his scapula and clavicle. At the emergency department the patient was conscious and alert, there were no neurological symptoms. The blood pressure on arrival was 104/57 mmHg and dropped to 70/40 mmHg with a heart rate of 80 b/m. Blood results showed a hemoglobin of 4.4 mmol/L (8.4-10.8). After three packed cells the blood pressure increased to 100/70. Other aberrant blood results were ureum 12.0 mmol/L (2.5-7.0 mmol/L), kreatinine 129 µmol/L (60-110 ummol/L), Glomerular Filtration Rate (GFR) 46 ml/min/1.7 (>90), γ-GT 113 U/L (<55 U/L). The CT-angio showed an impressive blood mass on the right thorax



Figure 1: Distal clavicle fracture, on this plain X-ray a subscapular mass is also evident.

(Figure 2). The bleeding originated from a rupture of the DSA. First choice of treatment to stop the bleeding was endovascular coiling. This therapy failed because the target vessel could not be catheterised and stenting the thyrocervical trunk without sacrificing the vertebral artery wasn't feasible. Therefore an open procedure was indicated. This procedure was successfully performed with an incision in the posterior triangle of the neck to ligate the thyrocervical trunk (Figure 3). Three extra incisions were made on the right thorax to evacuate the hematoma and two penrose drains were placed (Figure 4). After



Figure 2: Mass right thorax.

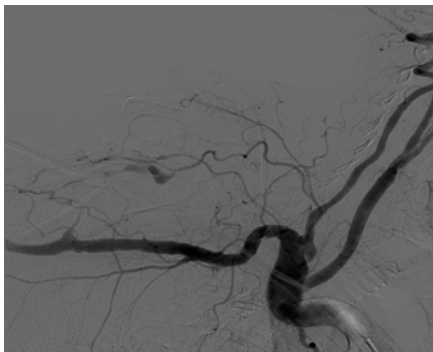


Figure 3: Selective angiograph of the brachiocephalic trunk with carotid artery, vertebral artery and thyrocervical trunk.



Figure 4: Ligation of thyrocervical trunk.



Figure 5: Adequate surgical drainage. Penrose drains are used to prevent the wounds from early closure and to facilitate further drainage and wound care.

three days on the high care unit he was transferred to the surgical ward. He developed pneumonia and was diagnosed with a delirium.



Figure 6: Wounds after 1.5 months.

After 27 days he was discharged to a rehabilitation centre. (Figure 5) shows the situation 6 weeks after the initial operation. At that time he was discharged of further surgical follow up. He was last seen in good health at the outpatient clinic of the rheumatologist seven months after the operation.

Discussion

A traumatic rupture of the DSA with clinical symptomatic hematoma is a rare presentation. In this case the distal clavicle fracture after a fall a month earlier does not seem a plausible anatomic cause. Possibly in this same trauma a lesion to the DSA was induced with only a minor bleeding. Later with exercise and possibly a hypertensive episode the liquefied hematoma resolved and a new bleeding occurred. A conservative strategy is usually sufficient. Evacuation of the hematoma is only required to prevent skin necrosis. But in the event of an active bleeding this might lead to an uncontrolled situation, as with loss of compression the bleeding might get worse. Therefore control of the bleeding is first designated. Endovascular treatment is minimal invasive and possible under local anaesthesia. Coiling of the arterial lesion is the first choice in the case of a terminal artery. Otherwise closing the lesion with a covered stent is possible. Sometimes closing of an entire branch with a covered stent might be needed. In that case the success rate may be less as the arterial lesion can be supplied by collaterals. The arterial lesion should be treated as distally as possible. If this regime fails or overstenting is not possible without compromising crucial branches, a surgical approach is indicated.

Conclusion

Massive hematoma after a rupture of the descending scapular artery is a rare diagnosis. If an endovascular strategy fails a direct surgical approach with is a good alternative. Furthermore evacuation of the hematoma is mostly indicated to prevent skin necrosis.

References

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