Focal common carotid artery intramural haematoma

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Abstract

Focal common carotid artery intramural haematomas are rare. A 50-year-old man with a spontaneous onset of tenderness in the region of the right common carotid artery presented to our hospital (Christchurch, New Zealand). Ultrasound and CT imaging were consistent for an intramural haematoma. He was treated with antiplatelet therapy. A follow-up MRA showed resolution of the haematoma. Focal common carotid artery intramural haematomas are rare but not to be overlooked. This case presents a cause for intractable spontaneous neck pain in the region of the common carotid artery. Given the risk of rupture through the intima and potential risk for stroke the current recommended treatment is controversial.

Craniocervical artery dissections are rare with an estimated annual incidence of 3.5 to 4.5 cases per 100,000.\(^1,2\) They are particularly relevant in young to middle-aged patients where they may be the cause for as many as 20% of strokes.\(^3\) These usually involving the internal carotid and vertebral arteries. In rare cases, a dissection to the common carotid artery can also be observed but are usually in the context of trauma or as a continuation of an aortic dissection.\(^6\)

Isolated common carotid artery dissections are rare with only a few having been described in the literature;\(^5\) they are frequently due to iatrogenic trauma and show a double lumen on imaging.\(^7\)

A focal haemorrhage into the wall of an artery, also known as an intramural haematoma, are a variant of arterial dissections and becoming increasingly recognised in the literature.\(^8,10\)

Such an injury of the common carotid artery is particularly rare and may go undiagnosed. A literature search revealed only one previously documented case in a women presenting with a transient episode of word finding difficulties.\(^5\)

We present a case of a common carotid artery focal intramural haematoma presenting with neck pain.

Case report

A 50-year-old male patient presented with a spontaneous onset of right sided neck pain. Apart from being an ex-smoker and suffering from hypertension the patient was otherwise well. There were no marfanoid features and there was no history of hyperextension or rotational movements of the neck prior to the onset of pain.

Initially the patient self-medicated with simple analgesia, however the severity of the pain continued to increase. Eventually he presented to his general practitioner 30 days after the initial onset of symptoms.
Examination revealed an area of focal tenderness superficial to the location of the right common carotid artery. There was no evidence of miosis, ptosis or retinal ischaemic changes. An urgent carotid duplex scan of the area revealed a localised 10x4mm subintimal oval region of inhomogenous low echogenicity of the middle common carotid artery. The area corresponded to the patient’s point of tenderness and was consistent with a focal intramural haematoma.

Colour Doppler studies showed a PSV of 108cm/sec (80% of that on the right). There was no internal flow within the wall. He was referred to a tertiary hospital for specialist care where further imaging was performed. A subsequent CT angiogram supported the ultrasound findings and revealed a 33mm long crescent of soft tissue density in the anterior wall of the mid right common carotid artery. There was no intimal flap seen.

To prevent the risk of cerebral thromboembolism the patient was commenced on antiplatelet therapy with aspirin. A follow-up MR angiogram 6 months later showed clearance of the CCA intramural haematoma as well as no evidence of an underlying soft tissue lesion.

**Discussion**

Injury to the craniocervical vasculature usually occur from extending aortic arch dissections or from a previous history of trauma. They can also occur spontaneously. Focal intramural haematomas particularly of the aorta are increasingly becoming recognised as a variant of arterial dissections. A literature search revealed only one previously documented case of a focal intramural haematoma of the common carotid artery.

Arterial dissections are classically described as originating from a tear in the intima with longitudinal extension down the media layer of the vessel. In comparison, intramural haematomas have been described as a localised haemorrhage in the vascular layer without evidence of an intimal tear and may arise from a primary vasa vasorum haemorrhage.

Intramural haematomas may be asymptomatic but can present with pain. They can result in either spontaneous regression or rupture through the intima. If they rupture they can be a source of emboli and cause neurological deficits such as in the previously documented case of a common carotid artery intramural haematoma.

Imaging techniques have improved considerably over the last two decades and craniocervical dissections are now easily identified with carotid ultrasonography and MRI. Due to the dual possibilities of rupture of the intimal wall and or thromboembolic events, the treatment and follow-up of intramural haematomas can be controversial. Treatment options include antiplatelet, anticoagulation with vitamin K antagonists and endovascular intervention with the insertion of a covered stent. In this case, due to the lack of neurological symptoms we treated solely with 6 months of aspirin therapy.

Although rare, common carotid artery intramural haematomas are not to be overlooked. They should be considered as a cause for intractable spontaneous neck pain in the region of the common carotid artery.
Figure 1. Ultrasound findings within the right common carotid artery revealing an intramural oval echogenic structure consistent with a haematoma

Figure 2. CT Angiogram findings consistent with the ultrasound findings revealing a subtle crescent of soft tissue density in the anterior wall of the right common carotid artery
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