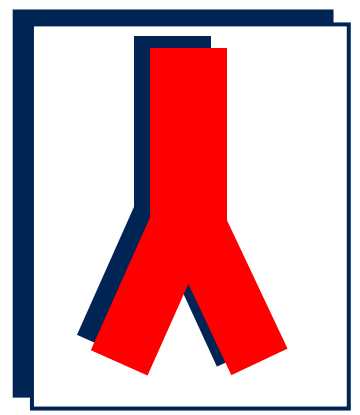


Will Butcher – Vascular Surgery

John Flynn Hospital, Gold Coast Private Hospital and Tweed Hospital

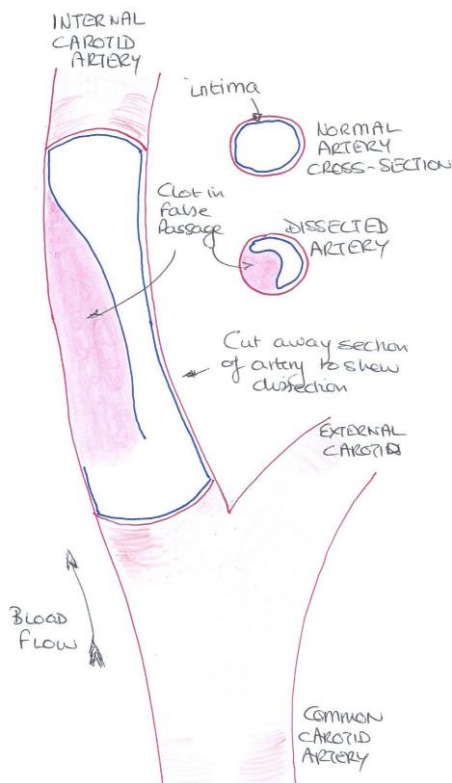


General Practitioner Information:

Carotid and other Cervical vascular dissections

Dissection of the Carotid artery is a relatively unusual event. Although the internal carotid artery is most commonly affected, the vertebral and basilar arteries may also be affected and the implications are similar. In simple terms a tear in the intima develops, the intima is then lifted up distally by the flow of blood. Several things may then happen.

- The false passage thus created may fill with blood and clot and obstruct the artery completely.
- The false passage may fill with blood which breaks back into the true lumen higher up, for a while there may be flow in both lumens.
- The false lumen with flow in it may clot off causing an “intramural haematoma”, this may narrow the true lumen
- In time the artery may remodel in such a way that the true lumen reforms.



Thus, there are four anatomical outcomes, the artery is more or less normal, it is narrowed, it is blocked or there may a persistent false lumen.

Similarly, there are multiple neurological outcomes. In some the dissection may cause no neurological effect at all – this is obviously the best case scenario but also the most common. Ischaemic neurological events may be caused both by occlusion or temporary occlusion of the internal carotid artery or by embolization of thrombus into the cerebral circulation. Lastly other global neurological signs like dizziness and headache are quite common. Damage to the internal carotid artery can also result in a Horner’s syndrome with drooping of the ipsilateral eyelid and constriction of the pupil, these can affect vision.

Causes

Trauma is usually cited as the commonest cause, this may vary from a major deceleration injury such as a motor vehicle accident but may also arise following a relatively minor event like a bump on the head. Classically, they have been associated with cervical spine manipulation and manoeuvres to correct benign positional vertigo. In truth though, increasingly many people report no history of trauma.

Symptoms

Other than the obvious findings of a stroke, patients may complain about headache, scalp pain, eye pain, anterior neck pain and dizziness. The degree is surprisingly variable, and some of these symptoms may last for a long time (months). Importantly there is a risk of delayed stroke. Dissection is the cause of around 1% of strokes but accounts for up to 25% of strokes in the young. Neck injuries being part of the cause for this condition, suggest that rupture of the artery with haematoma in the neck may be a feature. This would be an extreme case in which the features of trauma are likely to be obvious.

Appointments:

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This practice prefers to receive referrals through Medical Objects (4187883F)

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Imaging

Carotid dissection is a diagnosis that I am seeing more and more in recent years. There are several reasons for this. At least one reason is the increased tendency to refer neurological patients for a vascular opinion. In addition modern imaging techniques like CTAngiography and MRI mean that things previously not seen or even looked for are now much more frequently found. If the diagnosis is suspected a CTAngiogram of the neck is the test of choice, this provides the option of a brain scan to evaluate neurological findings. Carotid duplex is a useful minimally invasive test but may not be very sensitive. It may miss more distal events and is very operator dependent.

Treatment

Patients who have suffered a neurological event should always be referred to an appropriate stroke unit for evaluation, counselling and rehabilitation. In the absence of neurological findings, anticoagulation to prevent future ischaemic events is advised. A recent trial (CADISS) demonstrated that aspirin alone provided the same benefit as other agents or combinations of agents, historically though it was common to anticoagulated patients with Warfarin for up to a year and many practitioners still do this. I do not feel this is necessary or justified.

The role of statins is uncertain, certainly high cholesterol should be treated in this group of patients. Furthermore, on balance I think the potential association with atherosclerosis makes treatment with a statin desirable for sufferers. On balance though if the statin is not well tolerated, or there is resistance from the patient, use for a 6 month period as an attempt to maximise the likelihood of carotid repair would seem reasonable.

There is an established association between carotid dissection and hypertension. Careful blood pressure management is appropriate.

Follow up

Dissection of the carotid artery leaves the artery inherently weakened, and so long term surveillance to exclude aneurysm formation is sensible. Again, a pragmatic approach suggests that a modest period is

all that is required. It is less than ideal to subject young folk to multiple CTScans over many years. I tend to order a scan at 3 months and then at 6 months. I think if the artery is occluded after 6 months then surveillance should cease. If the artery is patent and normal calibre then a single further scan at 18 months should be adequate. Arteries which are showing signs of aneurysm formation require long term follow up.

As many as two thirds of patients can expect some return of carotid flow as the artery remodels. Those in whom the artery was never completely occluded can expect significant remodelling and repair of the artery.

Family history

The minority of dissections are associated with a connective tissue disorder like Marfans syndrome or Ehlers-Danlos Syndrome and these should be considered in familial presentations. However, even in the absence of a defined connective tissue disorder spontaneous dissection of cervical arteries does have a familial association. This supports a premise that there is something unique about the vessel anatomy in these patients with places them at risk of dissection. Importantly this also implies that there is a risk of contralateral dissection in time. This, I believe, provides a case to manage hypercholesterolaemia and hypertension in patients who have experienced a cervical vascular dissection closely.

Surgical treatment

Usually the outcome of a carotid dissection is defined prior to presentation and further surgical intervention is not required. Others have used a stent to reline the artery and re-open the lumen. Given the possibility of a large volume of clot in the false lumen this is fraught with risk. In a few cases surgical repair has been undertaken. Again, this carries a risk of stroke and is usually not possible due the dissection extending above the base of the skull and thus being inaccessible. In some the dissection is localised and proximal making a surgical repair feasible. Interventions should only be considered if there are ongoing symptoms. Aneurysms of the carotid may be treated by stenting, embolization or surgery.