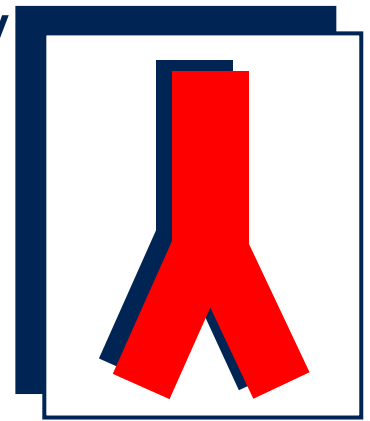


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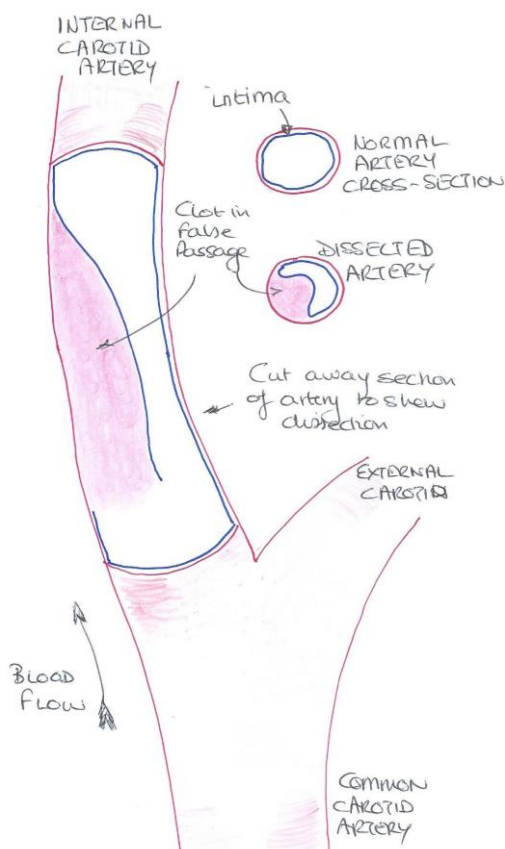
Patient information

Carotid Dissection and Dissection of other head and neck arteries



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

- The false passage created may fill with blood and clot and block the artery completely.
- The false passage may fill with blood which breaks back into the normal artery higher up, for a while there may be flow in both the false passage and the normal artery.
- The false passage with flow in it may clot off causing an "intramural haematoma", this may narrow the artery
- In time the artery may remodel in such a way that the artery returns to it's normal structure.



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 passage.

What can happen when the artery dissects?

Most people are aware they have had a dissection by a combination of pain in the neck, scalp and/or eye. They may also be dizzy.

The most concerning event is a stroke, this is when part of the brain loses it's blood supply and stops working. The obvious effects of this are loss of function of one hand and leg (always the same side). There may be loss of speech or slurred speech. The face may also be affected. If very severe the sufferer may become unconscious and even die from this.

Sometimes when part of the brain stops working it does so not because it has died but because it is stunned. The blood supply is just enough to keep it alive but not enough to allow it to work normally. Under these circumstances the body may improve the blood supply over time resulting in some improvement in the outcome. Alternatively if help is sought early, medical intervention can improve the circulation. It is therefore imperative that if a stroke is suspected that you seek help as quickly as possible.

Although this is very frightening, most dissections do not result in a substantial disability and many have no effect on the brain. Some people may have a Horner's syndrome. This is when certain nerves that run in the wall of the artery are paralysed, this causes a droopy eyelid.

Causes

Injury is usually cited as the commonest cause, this may vary from a major accident 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 neck manipulation by a physiotherapist or chiropractor. 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.

Imaging

Carotid dissection is a diagnosis that I see more and more in recent years. There are several reasons why this is likely. At least one reason is the increased tendency to refer neurological patients for a vascular opinion. In addition modern imaging techniques like CT Angiography and MRI mean that things previously not seen or even looked for are now much more frequently found. If the diagnosis is suspected a CT Angiogram of the neck is the test of choice, this provides the option of a brain scan to evaluate neurological findings. A carotid ultrasound scan is a useful minimally invasive test but may not be diagnostic.

Treatment

The treatment of a dissection has several elements. Obviously if the patient has had a major injury there may be several other issues like broken bones and so on that need to be attended to. If there has been a stroke the patient needs to be sent to a stroke unit as soon as possible to get early care to improve the circulation if this is feasible and also for help with rehabilitation and recovery. Very occasionally if there are ongoing symptoms then some sort of surgical intervention may be possible to improve the outcome.

The mainstays of treatment are management of the pain and helping to prevent future strokes related to the acute event. Usually the pain settles quite soon, simple painkillers like paracetamol and anti-inflammatories may be very helpful, but some patients will need something stronger.

Preventing future events involves providing a blood thinner to prevent small clots forming that may travel into the brain and cause a mischief. In the past quite strong blood thinners were commonly used for this. Modern research has shown that these are no more

effective than a small daily dose of Aspirin (100mg), my practice therefore is only to use Aspirin. In addition to blood thinners, there is some evidence that the use of cholesterol lowering medication may improve arterial remodelling and increase the likelihood that the artery will repair. If you are reluctant to use this medication long it is probably reasonable to use it for a period of just six months to try and maximise the chances of artery repair.

There is an established association between carotid dissection and high blood pressure, so if you have high blood pressure this should be managed and monitored.

Follow up

Dissection of the carotid artery leaves the artery inherently weakened. Swelling or ballooning (aneurysm formation) of the artery is a possibility and so some follow up to check on this is sensible. I tend to order a scan at 3 months and then at 6 months. I think if the artery is completely blocked after 6 months then surveillance should cease. If the artery is normal 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 familial disorders like Marfans syndrome or Ehlers-Danlos Syndrome and these should be considered in patients who present with a dissection and have a family history. However, even in the absence of one of these disorders, 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 dissection in other vessels in time. This, I believe, provides a case to manage cholesterol and blood pressure in patients who have experienced a cervical vascular dissection closely.