Diagnostic Images

Neck trauma

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The patient

A male aged 27 who was stabbed in the neck 4 weeks earlier presented with headaches, facial swelling and a thrill above the left clavicle.

Investigations

Digital subtraction angiography (DSA) catheter arch aortogram and selective left carotid angiogram.

Figure 1 DSA arch aortogram demonstrating the major neck arteries with immediate filling of the left jugular indicating an arterio-venous fistula. A = aorta; RS = right subclavian; V = right vertebral; RC = right common carotid; LC = left common carotid; LS = left subclavian; J = jugular vein; An = aneurysms; SVC = superior vena cava.

Figure 2 DSA selective left carotid arteriogram with filling of the aneurysm leading into the jugular vein through a narrow fistula. LC = left carotid; An = aneurysms; f = fistula; J = jugular vein.

Comment

Knife wounds in the neck can produce various vascular injuries including arterial and venous aneurysms, and arterio-venous fistulae. In the patient the stab wound has resulted in transection of the carotid artery and produced an arterio-venous fistula between the left common carotid artery and jugular vein with false aneurysms. Both aortic arch and selective arterial studies are required for an adequate demonstration of this type of vascular abnormality, and is best carried out using DSA as the overlying bone is subtracted from the image, the images are immediately available for viewing and more dilute contrast medium is used. The procedure is thus quicker and safer.

In this patient there is an anomalous right subclavian artery that arises as the last branch of the aortic arch passing from left to right across the left subclavian, left common carotid and right common carotid. The right vertebral artery is in its usual position arising from the right subclavian.