Angiography in Orbital and Peri-Orbital Pathology

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Angiography of the orbit is a valuable aid to the diagnosis of orbital and peri-orbital processes. The orbital blood vessels can be made visible in two ways: a) contrast injection into the vena angularis demonstrates the venous plexuses; b) angiography of the carotid artery gives a picture of the ophthalmic artery.

In this way it is possible to differentiate three anomalies in the orbit: a) a pathological vascular picture in or round a tumour; b) displacement of blood vessels; c) vascular anomalies such as an angioma or the very rare aneurysm in the orbit.

If the internal carotid artery is occluded the collateral circulation via the ophthalmic artery can be depicted. An arterio-venous shunt, either in the orbit or in the cavernous sinus, can also be demonstrated by means of angiography. Extension of peri-orbital processes into the orbit, as may occur with a meningioma, can be exhibited. Finally, carotid angiography can nearly always demonstrate the presence of an aneurysm in the area of the internal carotid artery. This condition often gives rise to eye complaints in the form of an ophthalmoplegia.

The interpretation of the angiographic picture can only be performed satisfactorily if the subtraction technique of Ziedses des Plantes is applied. The bony structures, which confuse the picture, are then obliterated.

A number of cases were demonstrated.

Discussion

Van den Heuvel compliments De Raad on his demonstration. He asks if he has observed the gross vascular anomalies in the orbit and skull, described by Offret et al., which may accompany angiomata in the orbit. He also asks if the speaker considers that the X-ray picture is reliable enough to allow differentiation between benign and malignant processes.

De Raad has not observed vascular anomalies of the type described. Malignant processes usually produce a more markedly abnormal vascular picture than benign conditions. Detailed differentiation of the vascular patterns will only be possible when a larger amount of material is available.