Dural Arteriovenous Fistula

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A 44 year old male patient, non smoker, hypertensive was admitted with loss of consciousness followed by transient weakness of the right side of the body. He gave a past history of recurrent TIAs. On admission, he was fully conscious and oriented. Pulse 60/mt, BP 120/80 mm Hg. There were no cutaneous telangiectasias. There was no carotid bruit. CVS S1 S2 heard normally. Central nervous system examination revealed normal higher mental functions, cranial nerves and motor system. Patient was investigated with MRI Brain which showed prominent flow voids in the intra cerebral vessels and vessels of the basal cisterns more so in the quadrigeminal and perimesencephalic cistern. He underwent digital subtraction angiography which demonstrated partial thrombosis of superior sagittal sinus with dural AV fistula. Embolisation of the superior sagittal sinus dural AVF was done. Post embolisation there was no flow to the fistula from bilateral middle meningeal arteries.

Dural AV fistulas constitute 10-15% of all intracranial vascular abnormalities. The fistula represents an abnormal connection between the dural arteries to the dural veins or a venous sinus. The common predisposing factor for DAVF in adults appears to be venous sinus thrombosis. The venous hypertension develops after venous thrombosis opens microvascular connections within the dura. These channels hypertrophy resulting in shunting of blood between arteries and veins and when the fistula grows it recruits pial supply from the...
parenchymal vessels. The involved dural sinus receives arterialised blood flow that leads to mechanical obstruction of the sinus and retrograde drainage of blood away into the cortical veins. The incidence of dural arteriovenous fistula at the transverse sinus is 50%, cavernous sinus 16%, tentorium cerebelli 12% and superior sagittal sinus 8%. Aggressive features are due to venous hypertension and the neurological deficits are secondary to arterial steal. Digital subtraction angiography represents the standard diagnostic method. Endovascular neuroradiological intervention should be done to obliterate the feeding arteries and to close the dural AV fistula.

References