Intracranial parenchymal arterio-venous malformations are the commonly encountered lesions in either sex. They frequently present at 20 to 40 years of age. About half of all arterio-venous malformations (AVMs) manifest with hemorrhage and 25% have seizures as the presenting symptom. The remainder have symptoms of mass effect, headaches, vascular steal phenomena or focal neurological deficit. The orbital symptoms like proptosis and visual deficit are one of the uncommon manifestations of intracranial parenchymal arterio-venous malformations. At times the orbital symptoms are the first clinical signs which points towards the possibility of an underlying intracranial arterio-venous malformation (AVM) [1].

Figure 1. 30 years man with a parenchymal AVM in left parietal lobe.
(A) CECT shows enlarged and congested left cavernous sinus with lateral convexity. Few dilated venous channels can be visualized anterior to the left temporal lobe (straight arrow). Right sigmoid sinus is normal. (Curved arrow)
(B) Arterial-phase CECT shows a parenchymal AVM in left parietal lobe with minimal perilesional mass effect.
(C) Arterial-phase CECT (lower cut) shows multiple early-draining cortical veins draining the AVM, anteriorly and lateral to the left temporal lobe. Note the regurgitation of contrast into the left superior ophthalmic vein. (straight arrow).

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In the present case, the parenchymal AVM in the parietal lobe did not cause any mass effect over the orbital apex or cavernous sinus. Apart from this, there was no dural sinus obstruction or thrombosis to cause re-routing of the intracranial venous drainage, anteriorly through the cavernous sinus. The orbital congestion developed only because the left cavernous sinus was a predominant route of the venous drainage for the AVM. To the best of our knowledge, none of the reported cases of parenchymal AVM in the literature had manifested with orbital symptoms, solely because the cavernous sinus was a predominant route of the venous drainage. The present case further illustrates the point that an intracranial parenchymal AVM in the parietal lobe can manifest with orbital symptoms.

REFERENCES: