PICTORIAL CME

Sphenoid Sinus Carcinoma presenting as Bilateral 6th Nerve Palsy

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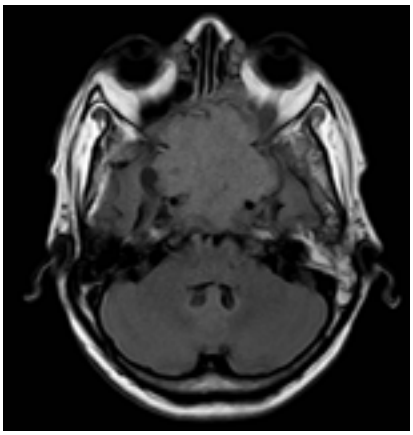

Fig. 1: MRI (T1) axial – isointense sphenoid sinus mass lesion causing erosion of walls of sphenoid, clivus with infiltration of cavernous sinus and encasement of internal carotid arteries

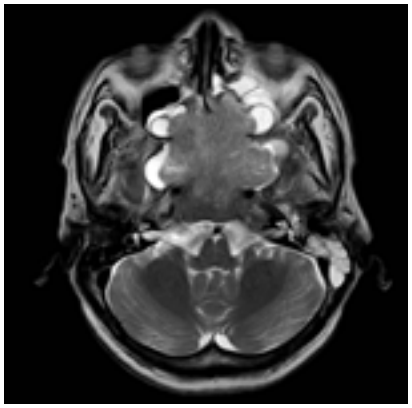

Fig. 2: MRI (T2) axial – isointense sphenoid sinus mass lesion causing erosion of walls of sphenoid, clivus with infiltration of cavernous sinus and encasement of internal carotid arteries

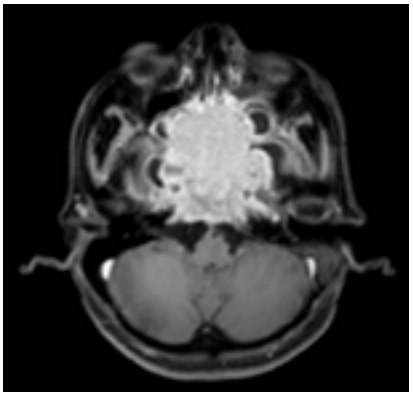

Fig. 3: MRI (T1) contrast axial – isointense enhancing sphenoid sinus mass lesion causing erosion of walls of sphenoid, clivus with infiltration of cavernous sinus and encasement of internal carotid arteries

75-year-old female, known diabetic for 10 years on regular treatment, presented with history of double vision on looking distant objects for 6 months. On examination, she was conscious, oriented, the vitals were normal. Pupil 3mm equally reacting to light on both sides. Bilateral lateral rectus palsy was present. Fundus was normal. Other cranial nerves were normal. There was no motor weakness noted. All the deep tendon jerks were normal. Plantars were flexor. Sensory, cerebellar systems were normal. Blood investigations including blood biochemistry were normal. HbA_{1c} was 5.6%. Magnetic resonance imaging (MRI) T1, T2 and contrast T1 axial – isointense enhancing sphenoid sinus mass lesion causing erosion of walls of sphenoid, clivus with infiltration of cavernous sinus and encasement of internal carotid arteries (Figures 1, 2 and 3). Diagnosis of sphenoid sinus carcinoma presenting as bilateral 6th nerve palsy was made. She was treated for the same and improving.

Bilateral isolated sixth-nerve palsy is a much less common clinical entity. Anatomically, the abducens nerve is located much closer to the internal carotid artery in the cavernous sinus compared to the oculomotor, ophthalmic, and trochlear nerves which are located at the lateral wall of the sinus. The anatomical proximity between abducens nerve and the internal carotid artery might be a factor for the isolated sixth-nerve involvement.

The most common causes of neurologically isolated CN 6th Palsies are not as grave. Eighty three percent of nontraumatic, neurologically isolated palsies are associated with either undetermined etiology (34%), hypertension (28%), coexisting hypertension and diabetes (17%), diabetes alone (4%). 8% are associated with multiple sclerosis and only 2% are associated with neoplasm.[1]

An MRI is recommended for older adults if the 6th CN palsy does not resolve within 3 to 6 months, the esotropia is progressing after 2 weeks from its onset, other neurologic signs or symptoms are present, or if the patient has a previous history of malignancy.[2] A bilateral 6th CN palsy should never be considered vascular in origin.[3] MRI is required to find out the cause for these patients.

Sphenoid carcinoma constitutes only 0.3 per cent of sinus cancer.[4] Its symptoms and signs are nonspecific until the sinus wall is penetrated. Once it is involved, specific neuro-ophthalmological symptoms and signs develop, resulting from involvement of anatomically contiguous structures. These are characterized most commonly by the sphenocavernous syndrome and less frequently by isolated sixth nerve palsies. Treatment, principally with radiotherapy supplemented by chemotherapy, has been disappointing with most patients dead by three years.

This case highlights the rarity and importance of bilateral isolated 6th nerve palsy in diagnosing neuro-ophthalmological syndromes.

References

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