A rare case of isolated cranial nerve six (CN VI) palsy due to poorly controlled diabetes mellitus

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Objectives

- Promote the recognition of sixth nerve palsy as a complication of diabetes mellitus
- Understand how the clinical presentation of diabetes-related sixth nerve palsy differs from sixth nerve palsies of other etiologies

Introduction

Sixth nerve palsy is a rare sequela of microvascular disease related to diabetes mellitus (DM) and/or hypertension (HTN). In the absence of other neurologic signs or symptoms, it is readily distinguishable from other causes of CN VI palsy that would cause limitation of abduction.

Case History

A 58 y/o AA M with PMH of poorly controlled Type 2 DM and well-controlled HTN presented with new onset horizontal diplopia. He denied any other neurologic symptoms. Ophthalmologic exam was notable for left abduction deficit that was worse on left gaze, concerning for left CN VI palsy.

Etiology of CN6 palsy	Symptoms
Elevated intracranial pressure or tumor	Headache, n/v, likely bilateral palsy
Stroke	Dysarthria, weakness, numbness, tingling, facial drooping
Myasthenia Gravis	Double vision w/ fatigable ocular muscle weakness
Thyroid eye disease	Abnl TFTs, exophthalmos
Giant cell arteritis	Headache, fever, malaise
Trauma	h/o closed or open head injury

Additional Clinical Information

CT/MRI/MRA brain: WNL
HbA1c: 12.2 (April), 9.6 (July), 8.4 (Oct)
TSH: 1.29 (2015)
CMP, lipids: WNL
Ophthalmologic exam: 20/25 OD, 20/20 OS, left esotropia w/ left abduction deficit, otherwise unremarkable

Summary and Conclusions

Isolated CN VI palsy has been infrequently reported in patients with DM and/or HTN and is thought to be a manifestation of microvascular disease resulting in thickening and hyalinization of nutrient vessel and subsequent ischemia to the nerve. In reported instances of isolated CN VI palsy, the prevalence of DM ranges greatly from 4-54%. Resolution of isolated CN VI palsy typically occurs over months to years with proper management of underlying conditions Although a rare complication of uncontrolled disease, it is important to consider in patients experiencing diplopia due to isolated nerve palsy in the setting of otherwise normal neurologic testing.