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(CASE REPORT)

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Bilateral Blindness as an Initial Finding of Occipital Lobes Meningioma Metastated from Lung Cancer

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Abstract

Introduction: Meningioma may increase intracranial pressure (ICP) and cause papilledema, which results bilateral blindness. Since elevated ICP is thought to be caused by an underlying condition, immediate neuroimaging is required to look into the possibility of papilledema. Patients with intracranial tumour sometimes being consulted to ophthalmologist with ocular problems as their complaint. The purpose of this report is to describe a case of papilledema as an initial finding of occipital lobes intracranial tumor metastated from lung cancer.

Case presentation: A female, 50-year-old patient being consulted from the ward with chief complaint bilateral visual loss gradually worsening in the last three months. Further history taking revealed other symptoms including relapsing headache since a year ago. Patient also came to the ophthalmologist a year ago and get examinated because of the headache and the examination result is only refraction disorder. Patient had decrease of consciousness and started coughing with massive sputum production since a week ago before she is admitted to the hospital. Patient was undergone Lung CT scan, a large mass was found in left lung, then she is diagnosed with lung cancer. Before that she never have any complaints about shortness of breath and chronic cough. The visual acuity on both eyes were already no light perception at the initial visit. Anterior segment was calm but the pupil was mid dilatation with no light reflexes. Fundus examination revealed papilledema, the optic nerve heads edges was blurred. Intraocular pressures were 12 mmHg. A MRI was performed 3 months before the patient got admitted to the hospital and revealed a massive solid mass in the left occipital lobe (approx AP 4 x LL 5 x CC 5.5 cm). Radiological reading suggested a meningioma. The patient was immediately referred to pulmonologist, neurologist, together with surgical neurology unit.

Conclusion: A patient with slow growing intracranial tumour may come quite late to seek medical attention since the symptoms are very mild and bearable. When being consulted, the visual acuity is already no light perception. Ophthalmologist must be aware and consider the metastases of lung cancer into intracranial tumour as a cause of visual loss and therefore not to delay its management.

Keywords: Intracranial Tumour; Papilledema; Bilateral Blindness

1. Introduction

An extrinsic lesion damages the optic nerve and results in compressive optic neuropathy (CON). CON can result from any lesion that causes an associated mass effect, including those with neoplastic (such as meningioma and glioma) as well as infectious (such as aspergilloma) and inflammatory (such as inflammatory pseudotumor) etiologies as well as vascular (such as aneurysm) and traumatic (such as fracture, hematoma) origins. When a compressive force is applied next to a bone or in a confined area, the optic nerve is especially susceptible to damage (e.g., orbital apex, optic canal).5

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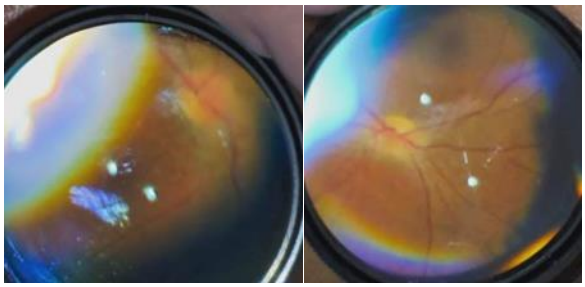
The word "papilledema" refers to bilateral enlargement of the optic disc brought on by higher intracranial pressure (ICP). Most ICP-raised patients report non-visual symptoms such headaches, nausea, and vomiting. Diplopia and impaired vision are examples of visual symptoms. Nonetheless, the visual acuity and color vision are typically normal in the early stages of papilledema. During ophthalmoscopy, papilledema cannot be distinguished from other sources of swelling in the optic disc.1-3 Optic disc edema brought on by increased intracranial pressure is known as "papilledema". The etiology can be caused by intracranial mass lesions and hemorrhages, hydrocephalus, lesions of the spinal cord, problems with cerebral sinus drainage, head trauma, meningitis, idiopathic intracranial hypertension (IIH), and other conditions.1

2. Case presentation

A 50-year-old woman patient presented with chief complaint of bilateral vision loss gradually worsening in the last three months. Further history taking revealed other symptoms including relapsing headache since a year ago. Patient also came to the ophthalmologist a year ago and get examinated because of the headache and the examination result is only refraction disorder. Patient had decrease of consciousness and started coughing with massive sputum production since a week ago before she is admitted to the hospital. Patient was undergone Lung CT scan, a large mass was found in left lung, then she is diagnosed with lung cancer. Before that she never have any complaints about shortness of breath and chronic cough.

On ophthalmological examination, the visual acuity on both eyes were already no light perception at the initial visit. Anterior segment was calm but the pupil was mid dilatation with no light reflexes. pupil diameter was 4 mm with a degression of pupillary reflect and positive relative afferent pupillary defect (RAPD). Fundus examination revealed papilledema/edematous optic nerve head (ONH) with obscuration of all borders. Intraocular pressures were 12 mmHg.



Figures 1 Fundus photography showing bilateral papilledema

Magnetic Resonance Imaging (MRI) was performed 3 months before the patient got admitted to the hospital and demonstrated multiple mass in supratentorial and infratentorial with the largest enhanced solid mass in the left occipital lobe (approx AP 4 x LL 5 x CC 5.5 cm). This mass induce bilateral papilledema, bilateral optic nerve head protursion as a sign of elevated intracranial pressure. Radiological reading suggested a meningioma. The patient was immediately referred to pulmonologist, neurologist, together with surgical neurology unit.

3. Discussion

Clinical signs and symptoms of compressive optic neuropathy include gradually progressing vision loss, decreased visual acuity and/or field, dyschromatopsia, a relative afferent pupillary defect, and eventually optic atrophy. Early symptoms of retrobulbar optic neuropathy may include enlarged or normal optical discs. Up to 75% of patients with intracranial tumors complain of headaches at first visit.7

This patient's complaint included a headache without nausea or vomiting. Non visual manifestations of ICP elevation can also cause headaches, nauseousness, vomiting, unconsciousness, or widespread motor rigidity. One of the most common the first signs of elevated ICP is headache. Coughing, straining, and Valsava movements can make it worse in some people since headaches are induced by stretching of the meninges.[1,2,9] The patient appeared to be compos mentis, showed no signs of motor rigidity, and her vital signs were within normal ranges, all of which are indications that an intracranial structural herniation has not taken place in this case.

In this case, an intracranial tumor was the cause of the high intracranial pressure (ICP). ICP was increased by the cerebral tumor through a number of methods. In this example, the brain tumor decreased CSF outflow, generated focal or diffuse brain edema, and served as a space-occupying lesion.

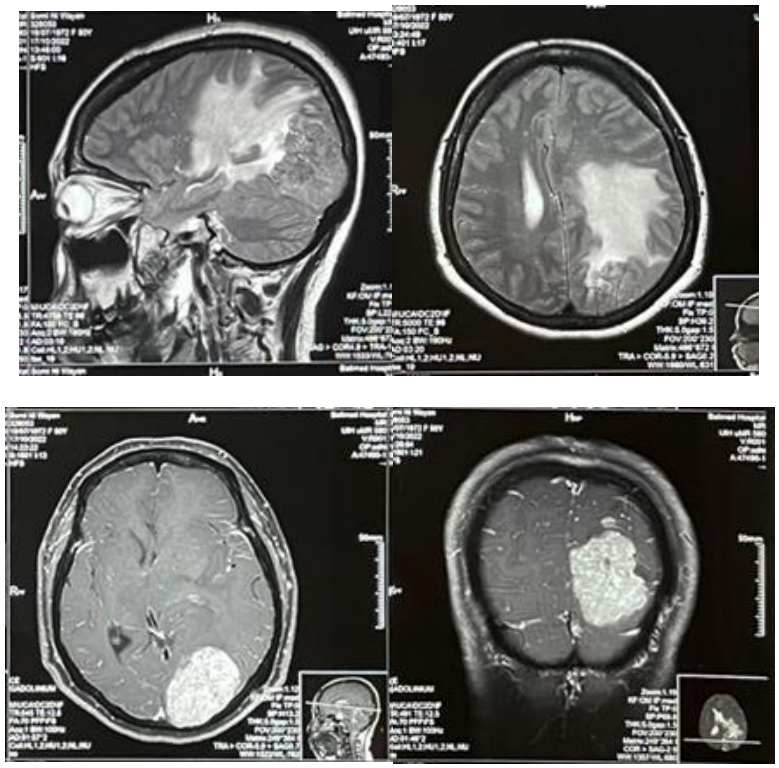


Figure 2 MRI showing large intracranial tumour consistent with meningioma

Neuroimaging is necessary for all patients with papilledema in order to determine the cause of elevated ICP. This imaging can be done using computed tomography (CT) scans, magnetic resonance imaging (MRI), contrast-enhanced CT venography, or MR venography.[10,11] According to the patient's MRI, reveals an intracranial tumor as the cause of the papilledema. The tumor and perifocal edema, which pushed the left lateral and third ventricle especially posterior horn and brainstem together with sylvian aqueduct, blocked the CSF outflow and resulted in secondary hydrocephalus.

The primary goals of treatment for meningioma with papilledema are to treat with the underlying condition, protect vision, and ease symptoms. Surgical excision, radiation therapy, or chemotherapy are frequently used to treat high ICP brought on by an intracranial tumor. Six to eight weeks following a successful craniotomy tumor excision, papilledema may resolved. Meningioma excision has long been regarded as the most effective and primary course of therapy. often carried out using multi-stage procedures that combine the advantages of various techniques (for example, endoscopic endonasal surgery for lesions of the anterior skull base).

This method might reduce the morbidity brought on by removing the entire tumor in a single procedure.[8] The percentage of gross total resections is about 50%. Surgical complications ranges from 1% to 18% of operations result in problems. With WHO Grade I meningiomas, the 5-year recurrence-free survival rate is 88%.[6]

According to certain research, meningioma and disturbances in visual acuity are related. For the recovery of visual function, early detection and tumor excision are essential. Patients with meningiomas on the lateral and superolateral sphenoid ridge often have a better prognosis for vision than individuals with tumors encroaching on the optic canal. The prognosis of meningioma-related visual acuity disturbance depends on the severity of visual impairment and the duration of preoperative symptoms.[12]

A study by Gregorius showed the recovery of vision in 23 patients with suprasellar meningioma who underwent surgery most frequently occurred within the first several weeks after operation, and further return of vision was not noted after 1 year.[13]

As in this case, the patient is referred to a neurosurgeon for the appropriate treatment. The prognosis for survival is still uncertain because the tumor's kind, whether malignant or benign, is unknown. Due to the severity of the papilledema and the potential harm posed by persistently high ICP, visual prognosis is still difficult to predict.

4. Conclusion

A patient with slow growing intracranial tumour may come quite late to seek medical attention since the symptoms are very mild and bearable. Neuroimaging is required for papilledema patients in order to identify the main cause of elevated ICP. In cases where the patient's visual acuity is already incapable of perceiving light, vision loss brought on by a meningioma might not be fully recovered. To have a better result, an immediate multidisciplinary approach and early identification are required.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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