

## Case report

# Crowded Disc in a High Hyperopic Patient Misdiagnosed as Papilledema

Maryam Yadgari <sup>1,\*</sup>, MD; Parivash Nourizade <sup>1</sup>, MD; Nina Firoozian <sup>1</sup>, MD;  
Behnoosh Attarian <sup>1</sup>, MD

1. Ophthalmic Research Center, Research Institute for Ophthalmology and Vision Science, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

**\*Corresponding Author:** Maryam Yadgari

**E-Mail:** maryam.yadgari@yahoo.ie

## Abstract

A 16 year old female was referred to neurological clinic with diagnosis of papilledema for neurological evaluation. After consultation with us we became suspicious of pseudopapilledema according to refraction and biometric characteristics of the eye and the patient's history. We performed fluorescein angiography for the patient. There was no leakage of fluorescein in images and papilledema diagnosis was rejected. The patient was diagnosed with crowded disc due to high hyperopia. This correction of diagnosis prevented the neurologist colleagues from developing the wrong diagnosis of papilledema caused by an intracranial mass, and performing any unnecessary investigations such as brain MRI or lumbar puncture.

**Keywords:** Crowded Disc; Pseudopapilledema; Papilledema; Fluorescein Angiography.

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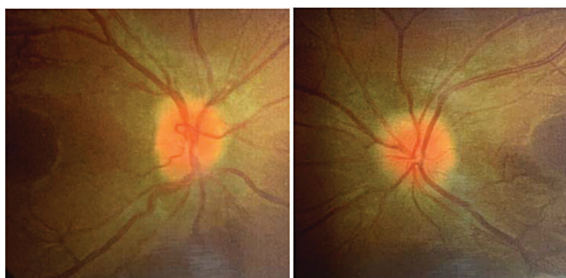
## Introduction

Pseudopapilledema is anomalous elevation of optic discs without true edema of the retinal nerve fiber layer that mimics true papilledema caused by increased intracranial pressure<sup>1</sup>. Some anomalies such as optic nerve head drusen, crowded disc, congenital anomalies such as myelinated nerve fibers, and tilted optic discs can cause pseudopapilledema<sup>2,3</sup>. In a crowded disc, a normal number of ganglion cell axons converge at a small optic disc which can create indistinct margins of the optic disc. Crowded discs are commonly associated with hyperopia due to shortened axial length<sup>4,5</sup>.

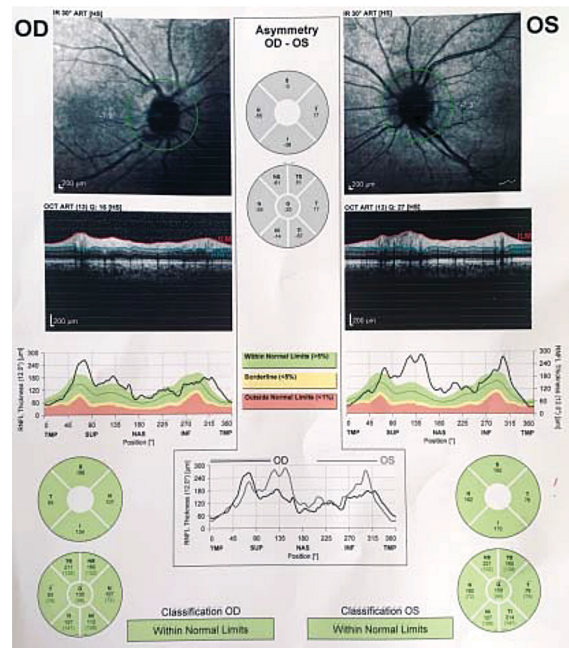
## Case Report

A 16 year old female without headache or vomiting was referred to neurological clinic with diagnosis of papilledema and probability of intra cranial hypertension for neurological evaluation.

She had been using spectacles for the last 5 years. On examination visual acuity was 7/10 with  $+7.00 - 2.5 \times 150^\circ$  diopter OD (right eye) and 8/10 OS (left eye) with  $+5.5.00 - 0.25 \times 180^\circ$ , diopter respectively. Her anterior segment examination was unremarkable. Keratometry readings were OD: K1:  $40.32 \times 174^\circ$ , OD : K2:  $44.41 \times 84^\circ$ , OS : K1:  $40.17 \times 180^\circ$ , OS : K2:  $43.44 \times 90^\circ$ . The anterior chamber depth was 3.09 mm OD



**Figure 1:** Optic disc with blurred margin in both eyes

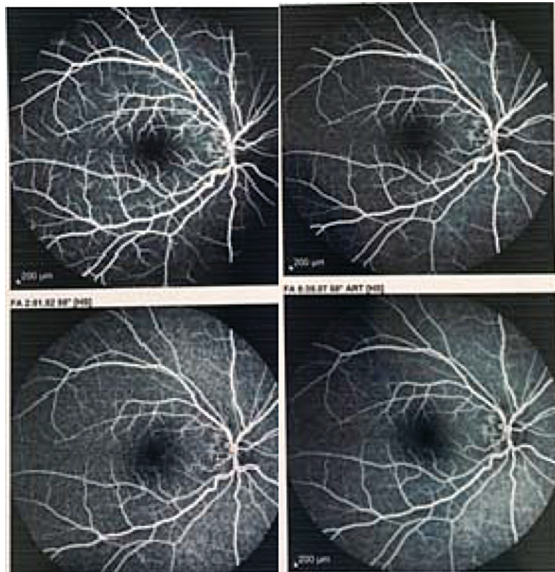


**Figure 2:** Thick nerve fiber layer in peripapillary optical coherence tomography

and 3.02 mm OS. Lens thickness was 4.00 mm OU. Axial length was OD: 21.17 mm and OS: 21.58 mm, which were smaller for her age. Intraocular pressure was 14 mm Hg OU (both eyes). Relative afferent pupil defect (RAPD) was negative. Fundus examination showed optic disc with blurred margin in both eyes (Figure 1) and thick nerve fiber layer was observed in peripapillary optical coherence tomography exam (Figure 2). The patient did not complain of headache or vomiting as expected in papilledema. We performed fluorescein angiography for the patient. There was no leakage of fluorescein in fluorescein angiography images (Figure 3) and the diagnosis of papilledema was rejected. The patient was diagnosed with pseudopapilledema (crowded disc) due to high hyperopia and reduced axial length.

## Discussion

It is critical to distinguish pseudopapilledema



**Figure 3:** No leakage was observed in fluorescein angiography images

from true papilledema, since the later may cause vision loss, neurological defects, or even death. Patients with papilledema are often subjected to lumbar puncture, MRI, and other extensive laboratory studies to find the underlying disease. There are reports of optic disc drusen masquerading as papilledema and even treated according to this wrong diagnosis <sup>6</sup>. Intravenous fluorescein angiography is an almost definitive method for the diagnosis of true optic disc edema showing capillary leakage in papilledema, but not in pseudopapilledema <sup>7</sup>.

## Conclusion

Diagnosis of pseudopapilledema in cases suspected of papilledema in absence of nausea and vomiting reduces the need for further expensive investigations such as brain MRI or invasive modalities like lumbar puncture.

## Authors ORCIDs

Maryam Yadgari:

 <https://orcid.org/0000-0003-0829-1861>

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## Footnotes and Financial Disclosures

### Conflict of Interest

The authors have no conflict of interest with the subject matter of the present study.