

PAPILLOEDEMA IN A CASE OF SEVERE ANAEMIA DUE TO PURE RED CELL APLASIA: A CASE REPORT

Ophthalmology

Dr Sanjana Shah 3rd Year Resident, Dept. of Ophthalmology, S.S.G. Hospital, Vadodara.

Dr Isha Gandhi 3rd Year Resident, Dept. of Ophthalmology, S.S.G. Hospital, Vadodara.

Dr Indravadan Vasava Assistant Professor, Dept. of Ophthalmology, S.S.G. Hospital, Vadodara.

Dr Diti Patel M.S. Ophthalmology

ABSTRACT

Papilloedema is defined as swelling of the optic disc due to elevation in intracranial pressure. Anaemia may play a role in the occurrence of raised intracranial pressure and papilloedema. Only a few cases in the literature support this association. We report a case of a 17-year-old male, who presented with a 1-week history of weakness, headache and vomiting with one episode of seizure. Ophthalmic evaluation revealed bilateral optic disc edema. Laboratory investigations confirmed severe anaemia in a case of Pure red cell aplasia. This case documents the rare occurrence of papilloedema in a case of severe anaemia due to pure red cell aplasia.

KEYWORDS

papilloedema, pure red cell aplasia, anaemia, intracranial hypertension

INTRODUCTION

Papilloedema is the swelling of the optic disc due to the transmission of raised intracranial pressure through the optic nerve. It can occur as a symptom of various intracranial pathologies that elevate the intracranial pressure.¹ Intracranial hypertension, and in turn papilloedema, has been reported as a rare association with anaemia.² Pure red cell aplasia (PRCA) is a syndrome defined by a normocytic normochromic anaemia with severe reticulocytopenia and marked reduction or absence of erythroid precursors from the bone marrow.³

Here, we present a case showing this rare association between papilloedema (high intracranial pressure) and severe anaemia in a case of pure red cell aplasia, where a significant symptomatic resolution was observed with correction of anaemia.

CASE REPORT

A 17-year-old male patient was admitted in the medicine ward for complaints of generalized weakness, headache and vomiting since 1 week and 1 episode of seizure 2 days ago. On Ophthalmic examination, his visual acuity was OD 6/24 AND OS 6/36 and best corrected visual acuity was 6/12 in both the eyes. Anterior segment evaluation revealed conjunctival pallor. On Indirect ophthalmoscopy of both eyes, we found disc edema with blurring of all disc margins with a dull foveal reflex.

Hematological evaluation showed hemoglobin of 2.50g/dl. Smear study showed Normocytic normochromic RBCs with anisocytosis, elliptocytes. RBC count was low (2.16million/l/mm³), Ferritin (633ng/ml), TIBS (313.1), transferrin saturation (95.14) was raised and reticulocyte count was low. MRI brain with contrast revealed no significant Intracranial abnormality. CECT abdomen showed hepatosplenomegaly. Bone marrow biopsy showed hypercellular marrow with pure red cell aplasia with markedly decreased erythroid tissues.

The patient was transfused with 5 units of packed red blood cells along with injectable Clindamycin, Oral steroids (Tablet Prednisolone) and injection Erythropoietin (once a week).

Patient showed symptomatic relief after one week of treatment with no complaints of headache and no episodes of vomiting or seizures.



Figure 1: Fundus Appearance At Presentation Showing Optic Disc Swelling (Right Eye)

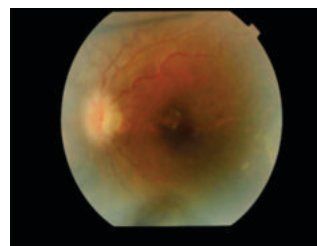


Figure 2: Fundus Appearance At Presentation Showing Optic Disc Swelling (Left Eye)

DISCUSSION

- Anaemia may play a role in the occurrence of raised intracranial tension and papilloedema. Although only a few cases in the literature support this association, it may be more common than previously thought.⁴
- The pathophysiology behind this association between anaemia and papilloedema has not been clearly explained. Many hypotheses have been put forward. It has been thought a loss of iron dependent enzymes due to anaemia may result in lowering oxygen carrying capacity with resultant papilloedema and cerebral edema causing raised intracranial pressure⁵
- Our patient initially presented with symptoms of weakness, headache vomiting and seizures, diagnosed with pure red cell aplasia on routine blood workup and bone marrow biopsy.
- To rule out other causative factors of raised intracranial tension, MRI was done.
- Our treatment did not include any hyperosmotic agents or diuretics and symptoms of raised intracranial tension resolved solely with the treatment of pure red cell aplasia, which further confirms anaemia as a causative factor for papilloedema.

CONCLUSION

Papilloedema must be looked for in patients presenting with visual disturbances, headache in cases of severe anaemia as it helps in the early diagnosis of raised intracranial tension, which when promptly treated, prevents complications such as seizures and long-term visual deteriorations.⁶

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