# Case Report

## Risperidone Induced Benign Intracranial Hypertension Leading to Visual Loss

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## ABSTRACT

Benign intracranial hypertension (BIH) is a rare but potentially serious condition causing visual loss. Occasionally, medication use has been associated with the occurrence of BIH. We report the case of a 40-year-old obese lady being treated with risperidone for schizophrenia who presented with features of BIH. We report this case, occurring for the 1st time in India, to emphasize that a commonly used atypical antipsychotic drug can rarely cause BIH leading to visual loss.

**Key words:** Intracranial hypertension, medication, risperidone, visual loss, weight gain

## INTRODUCTION

Benign intracranial hypertension (BIH) is a well-known entity where elevated intracranial cerebrospinal fluid (CSF) pressures exist in the absence of obvious infections, venous thrombosis or intracranial mass lesions.¹ BIH has been synonymously described as pseudotumor cerebri or idiopathic intracranial hypertension.

Many drugs have been associated with the occurrence of BIH. We report a lady, being treated with risperidone for schizophrenia, who presented with symptoms of BIH.

To the best of our knowledge, only four such risperidone-induced cases have been reported in world literature with none from India.²⁻⁵ We report this case for its rare but serious morbidity occurring with a common antipsychotic medication.

## CASE REPORT

A 40-year-old obese lady presented with a severe holocranial headache for 10 days. She had associated nausea, vomiting, and rapid onset of painless loss of vision in both the eyes which progressed over 2 days.

She was a known case of schizophrenia on treatment under psychiatry for the past 10 years. She was treated with olanzapine and later with fluphenazine decanoate when she was irregular with medications. This was subsequently changed to risperidone after symptomatic improvement. She was only on 4 mg of risperidone for the past 1-year. She has had associated history of weight gain over the last 4 years which had rapidly worsened after starting risperidone. She did not have any other comorbidity.

On examination, she was obese with a body mass index of 32.4 kg/m². Her general and systemic examinations were normal. On ophthalmological evaluation, the pupils were equal but nonreactive bilaterally. There was the perception of light in the right eye and none at all in the left. Bilateral papilledema with primary optic atrophy in the left eye was noticed on fundus examination. On testing eye movements, she had bilateral restriction of lateral gaze. She was unable to do formal visual field testing due to the poor vision.

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Differential diagnosis considered included meningitis, cortical venous thrombosis, demyelinating illness with optic neuritis, and idiopathic intracranial hypertension. Magnetic resonance imaging (MRI) of the brain revealed increased diameter of the optic nerve sheath with flattening of the posterior sclera margin with prominent peri optic halo [Figure 1]. There was also a partially empty sella [Figure 2] and narrowing of the junction of the transverse-sigmoid sinuses [Figure 3] which were all suggestive of intracranial hypertension. The subsequent CSF study was normal except for the elevated opening pressure of 35 cm of water. A magnetic resonance venogram was also done to rule out cortical venous thrombosis. Visual evoked potential testing showed absent waveform in the left optic nerve.

A diagnosis of BIH was made based on the modified Dandy’s diagnostic criteria. She was then initiated on acetazolamide and mannitol for medical management of BIH. In view of the persistent headache, papilledema, and visual loss a surgical option was considered. As she had developed features of left optic atrophy, it was decided that a thecoperitoneal shunt procedure would be preferable to an optic nerve sheath fenestration. She thus underwent a lumbar thecoperitoneal shunt procedure. Postoperatively, her headache improved, and right eye vision improved from the perception of light positive to finger counting at six feet. Vision in the left eye remained negative for the perception of light.

Risperidone was stopped from the onset of the present admission. Aripiprazole was started later by psychiatry as part of her maintenance treatment. On review, a month later, she was doing well with no headache or further loss of vision.

**DISCUSSION**

The term BIH is a misnomer as it is not entirely benign. In adults, it is associated with raised CSF pressures above 25 cm of water. The modified Dandy’s diagnostic criteria have been used in making a formal diagnosis of BIH. This involves ruling out infective causes for raised intracranial hypertension with CSF testing. In addition, thrombotic reasons and intracranial mass lesions causing intracranial hypertension should be ruled out with MRI and magnetic resonance venogram.

It usually occurs in females of 15-45 years of age. Rapid weight gain and obesity have been previously implicated in the pathogenesis of this condition although the exact mechanisms are unclear. The resulting central obesity increases intra-abdominal pressure, pleural pressure, cardiac filling pressure, and central venous pressure is proposed to increased intracranial venous pressure and cause BIH. Increased leptin in obesity may contribute
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