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Internal Medicine Section

# Panda Sign: The Defining Feature of Wilson's Disease

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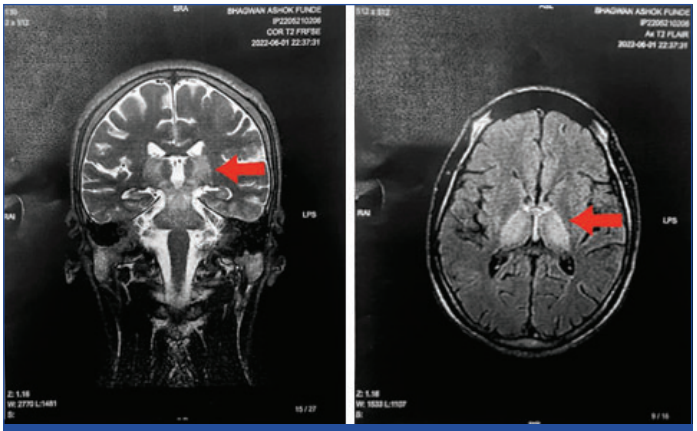
Wilson's disease is an autosomal recessive disorder caused by a mutation of the Wilson's (global) disease (ATP7B) protein produced by chromosome 13 [1]. It manifests as an inability to excrete copper in bile, leading to copper deposition in the liver, brain, and other organs. Clinical signs and symptoms include liver dysfunction and neuropsychiatric disorders [2]. While copper accumulation primarily occurs in the basal ganglia, it can affect all parts of the brain. Magnetic Resonance Imaging (MRI) is an effective tool for assessing disease severity and treatment response [3].

A 28-year-old male patient presented to the Emergency Department at Datta Meghe Institute of Higher Education and Research with complaints of tremors in the right lower and upper limbs for one year, diminished vision in both eyes for eight months, and speech slurring for five months. There were no significant past or family medical histories. Jaundice or cirrhosis, which would have indicated hepatic involvement, were absent. A slit-lamp examination revealed Kayser-Fleischer (KF) rings in both eyes. Laboratory investigations showed the following results: serum copper 70 mg/dL (normal range: 85-150 mg/dL), serum ceruloplasmin 9.2 mg/dL (normal range: 15-60 mg/dL), and 24-hour urinary copper 110 mg/day (normal range: 50-70 mg/day). Other routine investigations yielded normal results. Additionally, the patient displayed MRI findings. T2-weighted MRI images showed hyperintense regions in the bilateral thalami, brainstem, and middle cerebellar peduncles without diffusion restriction [Table/Fig-1,2]. These MRI findings resembled the "face of the giant panda", which is characteristic of Wilson's disease. Similar MRI appearances can be observed in conditions such as Leigh's disease, Japanese B encephalitis, methanol toxicity, extrapontine myelinolysis, malnourished patients, and in cases of rapid correction of hyponatraemia [4]. The patient was started on daily tablet penicillamine 250 mg and tablet zinc 50 mg thrice a day.



**[Table/Fig-1,2]:** T2-weighted image of MRI brain (coronal section) shows hyperintense region in bilateral thalami, brainstem and middle cerebellar peduncles without the restriction of diffusion suggestive of 'Panda sign'. T2-weighted image of MRI brain (axial section) shows hyperintense region in bilateral thalami, brainstem and middle cerebellar peduncles without the restriction of diffusion. (Images from left to right)

The "Panda sign," although seen in various conditions, is classically observed the present patients with Wilson's disease, as described in this clinical case.

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