

Neurosciences Quiz

Submitted by: Kazuo Abe, MD, PhD, Azusa Fukunishi, RPT, Yutaka Uchida, ROT.

From the Department of Nursing and Rehabilitation (Abe), Konan Women's University, and the Department of Neurology and Rehabilitation Center (Abe, Fukunishi, Uchida), Konan Hospital, Kobe, Japan.

Address correspondence to: Prof. Kazuo Abe, Department of Nursing and Rehabilitation, Konan Women's University, 6-2-23 Morikita-cho, Higashinada-Ku, Kobe 658-0001, Japan. Tel/Fax. +81 (78) 4133583. E-mail: abeneuro@konan-wu.ac.jp

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A patient with ataxia with a normal brain CT on admission

Clinical Presentation

A 60-year-old housewife noticed sudden onset left hemiparesis. On admission, she had left hemiparesis, more severe in the lower limb. A brain CT scan at this time was normal. After a few days, her hemiparesis was almost diminished, however, she had ataxia on the left side without paresis. She had no facial weakness and dysarthria.

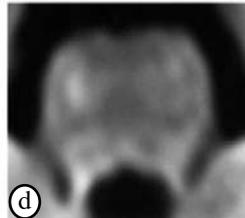
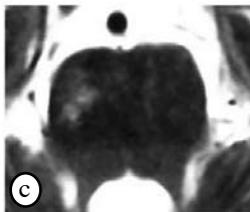
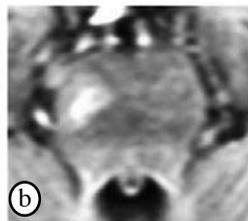
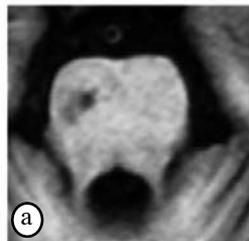


Figure 1 - Magnetic resonance images of patient.

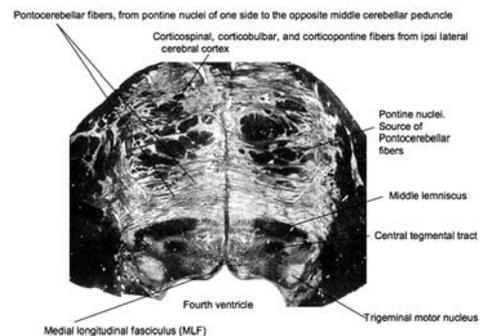


Figure 2 - Axial section of mid pons.

Questions:

1. What is the diagnosis?
2. What examination do you recommend to diagnose?
3. How do you explain her ataxia?

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Answers

1. She had ataxic hemiparesis. Ataxic hemiparesis is characterized by mild to moderate hemiparesis, predominantly in the lower extremity, and a cerebellar type of incoordination of the arm and leg out of proportion to the weakness.^{1,2}
2. Magnetic resonance images including diffusion images were recommended. In **Figure 1**, MR Images by a 3.0 Tesla system of this patient are demonstrated. Abnormal intensity are demonstrated in **a)** T1 weighted image, in **b)** the fluid attenuated inversion recovery image, in **c)** the T2 weighted image (lower left), and in **d)** the diffusion weighted image (lower right). A high intensity lesion in the diffusion image may be helpful to exclude old infarctions from newly developed lacuna infarction.
3. The ataxia is demonstrated probably because transverse fibers projecting from the pontine nuclei and/or to the cerebellum are impaired.³ **Figure 2** is an axial section of the mid pons that is stained for myelin. The MR images of this patient (**Figure 1**) demonstrated a lesion in the right pontocerebellar fibers and the right pontine nucleus that may cause ataxic hemiparesis.

Discussion

Ataxic hemiparesis is often due to a lacune affecting the internal capsule or the pons. However, a diagnosis of lacunar infarct has been found in only slightly more than half of the cases of ataxic hemiparesis.⁴ Thus, ataxia hemiparesis cannot necessarily be a hallmark of lacune. A CT scan may be helpful to rule out possible hemorrhage, and MR images may be used for detecting a responsible lesion.

References

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