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Homocystinemia Leading to Bright Facial Colliculus - A Rare Entity in Young Adults

By Suresh Kumar, Sudhir Sharma, Sanjiv Sharma & R G Sood
IGMC SHIMLA HP, India

Introduction- The facial colliculus is an elevated area located on the dorsal pons in the floor of the 4th ventricle. It is produced by the nucleus of the abducens nerve and the flexure of the facial nerve around it. Any lesion involving the abducens nucleus cause the disorder of internuclear ophthalmoplegia (INO) which is characterized by ipsilateral adduction deficit and the preservation of abduction of the contralateral eye when the patient tries to look in the contralateral direction. Isolated infarction of facial colliculus effecting abducens nucleus is very rare ^[1].

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Homocystinemia Leading to Bright Facial Colliculus - A Rare Entity in Young Adults

Suresh Kumar ^α, Sudhir Sharma ^σ, Sanjiv Sharma ^ρ & R G Sood ^ω

I. INTRODUCTION

The facial colliculus is an elevated area located on the dorsal pons in the floor of the 4th ventricle. It is produced by the nucleus of the abducens nerve and the flexure of the facial nerve around it. Any lesion involving the abducens nucleus cause the disorder of internuclear ophthalmoplegia (INO) which is characterized by ipsilateral adduction deficit and the preservation of abduction of the contralateral eye when the patient tries to look in the contralateral direction. Isolated infarction of facial colliculus effecting abducens nucleus is very rare ^[1].

II. CASE REPORT

A 27 year-old right handed male presented with history of sudden onset of headache, giddiness and

double vision with deviation of left eye outward. Ocular examination showed normal size of bilateral pupils with prompt direct light reflexes. His left eye was abducted (Figure 1), and he was not able to adduct right eye. There was nystagmus of left eye. Rest of the neurological examination was normal. MRI brain done which revealed bright spot on diffusion weighted imaging in right facial colliculus consistent with acute infarct (Figure 2). Retrospectively his blood analysis showed homocystinemia with homocysteine level of 43.15 μ mol/l.



Figure 1 : Shows abduction of left eye at rest

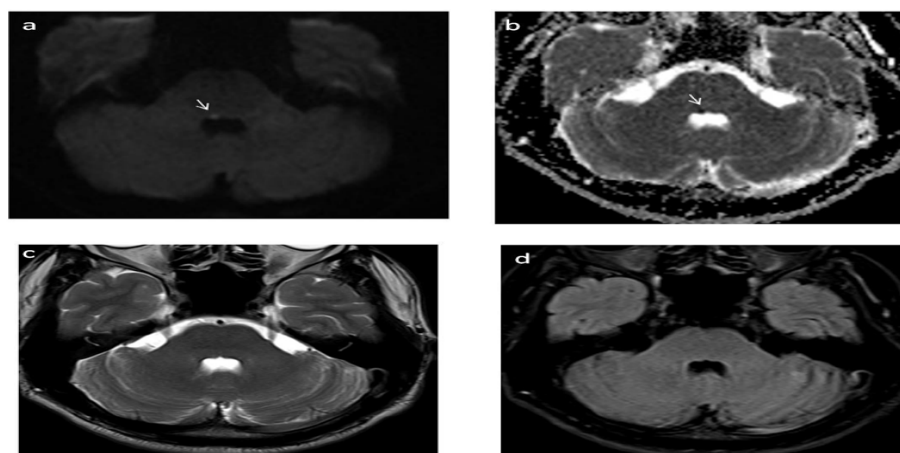


Figure 2 : Reveals bright right facial colliculus on Diffusion weighted imaging (a with white arrow), corresponding apparent diffusion coefficient image showing this area dark. No abnormal signal intensity appreciated on T2W (c) and Fluid attenuated inversion recovery image (d).

Author : Igmc Shimla Hp. e-mail: thakursuresh67@yahoo.co.in

III. DISCUSSION

The facial colliculus involvement leading to INO may occur in various disorders like demyelination, nutritional deficiencies, vascular diseases, tumor, infection, hydrocephalus and trauma^[2]. The demyelination and infarction are the most common pathophysiologicals among all^[3]. The pathogenesis of infarction in the brain stem is due to small-vessel occlusion secondary to athermanous disease of posterior circulation like basilar artery or posterior cerebral arteries. The atherosclerotic disease is usually seen in older patients. The metabolic disorder like elevated plasma homocysteine is a rare entity which is associated with risk of ischemic stroke^[4]. FathBender & Evers et al, reported that homocysteine injures small perforating arteries and cause lacunar infarction in patients^[5, 6]. Our patient also presented with focal infract of right facial colliculus secondary to elevated plasma level of homocysteine. The importance of presenting this case is that patients presenting with small vertebrobasilar lesions are likely to have negative imaging features. This failure to detect acute lesions may be attributable to factors such as perforating arteries feed very small areas of the brain stem, and magnetic susceptibility artifacts occurring near brain stem cause distortions in spatial resolution and blurred image analysis^[7]

Our case is unique in the sense that there was small lacunar infarct involving right facial colliculus in young adult and this was secondary to elevated plasma level of homocysteine which itself a rare cause of stroke. Thus while evaluating young patients of stroke these rare disorders should be kept in mind and brain imaging to be evaluated with great care.

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