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Case Report

A CASE OF SUDDEN CARDIORESPIRATORY ARREST IN LATERAL MEDULLARY SYNDROME

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ABSTRACT

Sudden cardiorespiratory arrest can occur several days after lateral medullary infarction especially when the patients were both medically and neurologically stable after a stroke which caused only minimal motor disability. Cardiac arrhythmia is among one of the mechanisms by which cardiorespiratory arrest have occurred. Another cause is that the lateral medullary infarction and surrounding brain tissue (possibly ischemic penumbra) may have affected the brain stem cardiac and respiratory centers together with autonomic pathways. Medullary lesions can cause autonomic instability which can precipitate death in each case. It is plausible that ischemic lesions of the solitary tract nuclei result initially with some lateral medullary infarctions, and that such lesions may in turn precipitate some occurrences of cardiorespiratory arrest. 54-years-old male presented with difficulty in swallowing, hoarseness of voice, vomiting, difficulty in walking and sitting upright. On the evaluation, he had left sided central facial nerve palsy, paralysis of the left soft palate, dysphagia, decreased pain and temperature sensation over the left face and upper limb, and cerebellar signs (dysdiadochokinesia and past pointing) in the left upper limb and truncal ataxia. Magnetic resonance imaging disclosed high intensity area in the left lateral and dorso-medial medulla in T2-weighted image. He developed rapidly progressive respiratory failure followed by sudden cardio-respiratory arrest. He was resuscitated and put on mechanical ventilation. He further developed severe hypotension not responding to intravenous inotropic supports. On 3rd day of hospital stay, he developed sudden cardiac arrest. Autonomic instability and sudden cardiorespiratory arrest which are rare manifestations of lateral medullary syndrome have occurred together in this patient.

Keywords: India, Kerala, Kottakkal, lateral medullary syndrome, Malappuram, Ondine's curse, sudden cardiorespiratory arrest

INTRODUCTION

Sudden cardiorespiratory arrest can occur several days after lateral medullary infarction especially when the patients were stable medically and neurologically after a stroke which caused minimal motor disability. Cardiac arrhythmia is among one of the mechanisms by which cardiorespiratory arrest have occurred [1]. Another cause is that the lateral medullary infarction and surrounding brain tissue (possibly ischemic penumbra) may have affected the brain stem cardiac and respiratory centers together with autonomic pathways. Medullary lesions can cause autonomic instability which can precipitate death in each case. It is plausible that ischemic lesions of the solitary tract nuclei result initially with some lateral medullary infarctions, and such lesions may in turn precipitate some occurrences of cardiorespiratory arrest [2].

CASE REPORT

A 54-years-old male presented with difficulty in swallowing and hoarseness of voice. He then developed vomiting and difficulty in walking. Soon he had vertigo with instability in sitting posture.

Physical examination revealed left sided central facial nerve palsy, paralysis of the left soft palate, dysphagia, decreased pain and temperature sensation over the left face and upper limb, cerebellar signs (dysdiadochokinesia and past pointing) in the left upper limb and truncal ataxia. He had no weakness of limbs. Magnetic resonance imaging brain disclosed high intensity area in the left lateral and dorso-medial medulla in T2-weighted image (Fig. 1). Electrocardiogram showed sinus rhythm. He developed rapidly progressive respiratory failure followed by sudden cardio-respiratory arrest. He was resuscitated and put on mechanical ventilation. Two-dimensional echocardiography showed no regional wall motion abnormalities with good left ventricle systolic function and tachycardia was noted at the time of evaluation. Chest X-ray showed no evidence of effusion/pneumothorax. He further developed severe hypotension not responding to intravenous (IV) inotropic supports. On 3rd day of hospital stay, he developed sudden cardiac arrest. Autonomic instability and sudden cardiorespiratory arrest which are rare manifestations of lateral medullary syndrome have occurred together in this patient.

DISCUSSION

A neuropathological study of five patients showed characteristic ischemic lesions in the solitary tract nuclei of the medulla after subacute hypoperfusion of the brain during acute heart failure. It was speculated that these medullary lesions had in turn caused autonomic instability which precipitated death in each case [2]. The study of Fitzek *et al*, included 15 patients with lower brain stem infarction. One patient with a "complete Wallenberg's syndrome" died during the period of observation. The patient was a 69 year old man who died

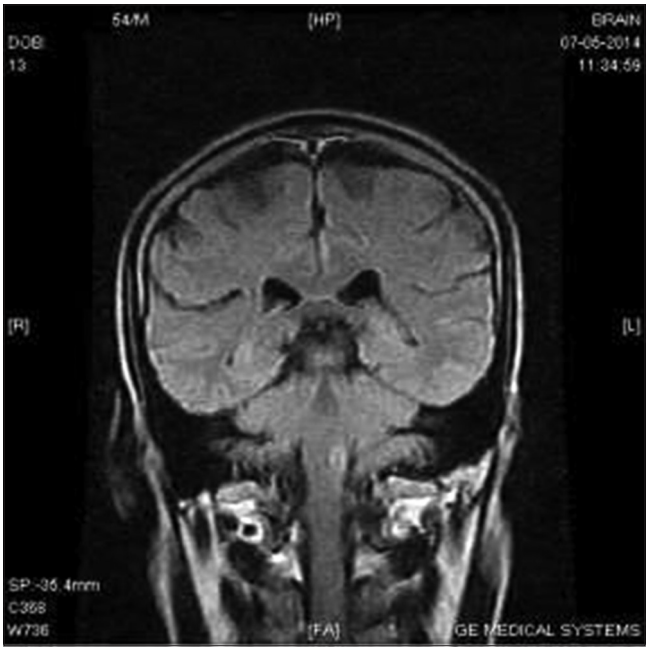

Fig. 1: High intensity area in the left lateral and dorso-medial medulla in T2-weighted image

unexpectedly 14 days after an acute brain stem infarction [3]. Patients have experienced unexpected sudden cardiorespiratory arrest several days after lateral medullary infarction, at a time when they were convalescing well and were stable medically and neurologically after a stroke which caused minimal motor disability [4-6]. Cardiac arrhythmia is among one of the mechanisms by which cardiorespiratory arrest have occurred [1].

It is plausible that ischemic lesions of the solitary tract nuclei result initially with some lateral medullary infarctions, and such lesions may in turn precipitate some occurrences of cardiorespiratory arrest [2].

CONCLUSION

A 54-years-old male with lateral medullary syndrome went into sudden cardiorespiratory arrest and had severe autonomic dysfunction in the form of hypotension not responding to IV inotropes even after cardiopulmonary resuscitation. Ondines curse (fatal acute progressive respiratory impairment due to impairment of the automatic respiratory system) is a rare manifestation of lateral medullary syndrome which makes this case worth presenting.

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