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Case Report

Harlequin Syndrome after Interscalene Brachial Plexus Block

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ABSTRACT

We report a 45 years patient who underwent PHILOS plating for right proximal humerus fracture under interscalene brachial plexus block. Contralateral symmetrical facial flushing extending to neck and upper thoracic region was observed 4 hours, after the brachial block, in PACU. Flushing resolved spontaneously within next 4 hours and no neurological deficit was observed. And no active management was required.

Key Words: Harlequin syndrome, Brachial plexus block, interscalene, PHILOS plating, regional anesthesia.

INTRODUCTION

Harlequin syndrome is unilateral flushing and sweating of the face and neck and upper thoracic region secondary to disturbed ipsilateral, vasodilator sympathetic outflow. [1] We report a case of Harlequin syndrome in a patient of right proximal humerus fracture which was surgically managed with PHILOS plating under interscalene brachial plexus block.

CASE REPORT

A 45 year old female was admitted for surgical correction following fracture of right proximal humerus. During the pre-anaesthetic check-up her B.P was recorded as 134/86 mm Hg and PR was 82/min. There was no history of allergy, hypersensitivity to any substance, trauma to upper cervical/thoracic region or any previous head and neck surgery. Her airway was graded as Mallampati grade I. Her systemic examination was normal. All investigations including haemogram, RBS, ECG and Chest X-ray were within normal limits. She was accepted for anaesthesia under ASA physical status class I.

In the morning of surgery, patient was shifted to OR and connected to monitor - non-invasive blood pressure (NIBP), SpO_2 and ECG. Initial recordings were B.P. = 130/90 mm Hg, H.R. = 86/min and SpO_2 = 99% on room air. Then midazolam 2mg IV was administered and patient was prepared for interscalene brachial plexus block. Under all aseptic precautions, ultrasound guided interscalene brachial block was given with 18 ml bolus of 0.75% Ropivacaine.

Dexmedetomidine infusion was started at 0.5 µg/kg/hr to maintain mild sedation with anxiolysis. Surgery was completed in 3 hrs and intra-operative period was uneventful. In PACU, the patient was haemodynamically stable, conscious and oriented. After 20 mins in the PACU and almost 4hrs after the interscalene block administration, patient showed hemifacial flushing contralateral to the site of block, with symmetrical involvement of neck and

upper thoracic region. Thorough examination revealed stable vitals with no systemic derangement. Only a well demarcated erythema was seen involving the above mentioned areas with intact sensory and motor function of the involved region. The contralateral flushing resolved spontaneously and completely within the next 4 hrs. No other neurological deficit was observed on close follow up of the patient.

DISCUSSION

The term "Harlequin Syndrome" was first coined by Lance & Drummond in 1988 when they discussed five cases of unilateral facial flushing & sweating which was induced by exercise. In Harlequin Syndrome the ipsilateral sympathetically mediated vasodilatation is disrupted while the contralateral face shows a normal or compensatory response. The pattern of the symptoms including the presence or the absence of Horner's syndrome, may suggest the level of sympathetic interruption.

The head receives it s sympathetic innervations from 8th cervical and first two thoracic cord segments, the fibres of which passing through inferior & middle cervical ganglia, and synapsing from the cells of superior cervical ganglion. The arm receives its post-ganglionic innervations from the inferior cervical & uppermost thoracic ganglia which are fused to form the stellate ganglion. In our case contralateral flushing may be the result of blockade of ipsilateral sympathetic innervations following the interscalene brachial plexus block. Harlequin syndrome may or may not be associated with Horner's syndrome. This is due to the fact that the ocular findings in Horner's syndrome are associated with the lesion at the level of T1 whereas the sudomotor and vasomotor findings of the Harlequin Syndrome are associated with the lesion at the level of T2 and T3. [2-3] Previously David Hulata and co-workers, described "coexisting Harlequin and Horner syndrome after interscalene brachial plexus block" in a 64 yr old patient with proximal humerus fracture. [4]

Local anaesthetic spread over cervical sympathetic chain after brachial plexus block is well documented. The symptoms of sympathetic blockade are transient and do not require any medical intervention, it resolves spontaneously and needs patient reassurance only. Lack of symptoms' resolution or any neurological deficit should be investigated further to delineate serious aetiologies such as mediastinal masses, carotid artery dissection, stroke or malignancy.

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