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Short communication

Unilateral soft palate palsy secondary to blunt neck trauma: a case report

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Abstract

Unilateral soft palate paralysis is rare. No cases of unilateral soft palate paralysis with associated velopharyngeal insufficiency (VPI) secondary to minor blunt neck trauma have been reported to date. This case details the presentation of a man with isolated unilateral soft palate paralysis and associated velopharyngeal insufficiency following a collision with an opponent when playing soccer.

Keywords: trauma; velopharyngeal insufficiency

Introduction

Unilateral soft palate paralysis is a rare but recognised condition. Iatrogenic surgical damage of the vagus nerve during surgery is the most common aetiology, however, idiopathic cases, most commonly presenting in the paediatric population have been documented, with infective or vascular theories to explain their occurrence.[1,2] Penetrating neck trauma has previously been identified as a cause of unilateral palatal paresis.[3] No cases of unilateral soft palate paralysis with associated velopharyngeal insufficiency (VPI) secondary to minor blunt neck trauma have been reported to date.

Case report

A 16-year old was referred to the palatal function clinic with speech characteristics of VPI following an episode of trauma to the neck. The otherwise fit and well young man was playing soccer and sustained blunt trauma to the left neck in an accidental collision with an opponent. No other injuries were sustained and the patient continued to play following the episode. Immediately after the clash, he experienced mild swallowing difficulty, which improved over a short period. He was aware of changes to his vocal strength and quality and presented to his General Practitioner (GP) when they failed to improve. The patient was then seen by the speech and language therapists who arranged a palatal function review provided by the national cleft service in his area.

On examination, he had hypernasal resonance, with mild audible nasal emission. Bilateral inaudible nasal emission was evident on the mirror test. Speech was intelligible but there had been no improvement in quality since the injury had occurred two months previously. Intraoral examination identified no abnormality at rest (Fig. 1) but during function only the right soft palate elevated with uvular deviation to the same side. There was no evidence of muscle wasting (Fig. 2). There were no abnormalities in swallowing or nasal regurgitation of food or fluids, and no other focal neurology

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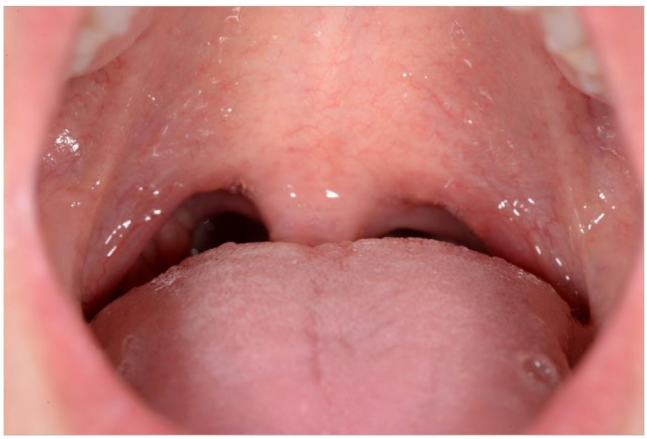

Fig. 1. The soft palate at rest.

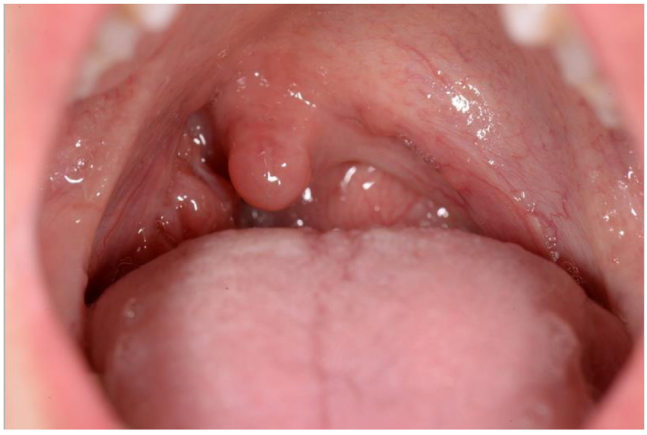

Fig. 2. The soft palate during function.

was identified. The gag reflex was intact. Nasoendoscopy identified normal vocal cord position and movement.

At last review, four months after injury, speech had improved in the absence of identifiable palatal recovery, presumably as a result of compensation from the tongue and unaffected contralateral side.

Discussion

Isolated unilateral soft palate paralysis is a rare condition with no published cases following discrete blunt neck trauma identified in medical publications.

Levator veli palatini, innervated by the pharyngeal branch of the Vagus nerve (X), is the principal elevator of the soft palate during function. A traumatically induced focal neuropraxia (a temporary interruption in nerve conduction without loss of axonal continuity) or axonotmesis (a relative loss of endoneurium continuity with or without regeneration)[4] of the pharyngeal branch of the vagus nerve was suspected. *As the effect of the high neck trauma presented at a level above the velum immediately following the collision, an ascending neural injury to involve the pharyngeal branch has been postulated. A local traumatic vascular injury, with resultant reversible or irreversible neural ischemia, may also account for the unusual presentation. However, no vascular studies were undertaken to explore this theory further.*

Peripheral nerve regeneration is estimated at 1 mm/day.[5] It has been suggested a period of observation for 6–9 months is a reasonable timeframe to monitor for spontaneous nerve recovery in high vagal injuries.[6]

The case was discussed with our colleagues in electrophysiology. Evoked electromyography of the soft palate apparatus or nerve conduction studies of the unilateral vagus nerve were deemed unachievable in the absence of general anaesthesia. Lateral video fluoroscopy, often used to investigate palatal function in non-cleft VPI, was considered of little value because of the laterality of immobility in essentially an anatomically normal palate. Flexible nasoendoscopy, in conjunction with speech and palatal function assessments, are currently being used to monitor the patient.

Netterville and Vrabec[7] have previously described a palatal adhesion procedure for unilateral VPI following resection of skull base tumours. Approximation of the paralysed soft palate to the ipsilateral posterior nasopharyngeal wall enabling the non-paralysed side to function as the effective velopharyngeal sphincter has been described. A similar dynamic corrective procedure like the modified sphincteroplasty detailed could be considered in our patient if problematic VPI persists at a time beyond which spontaneous nerve recovery is deemed likely. At present the patient has no concerns regarding his speech and with the possibility of spontaneous nerve recovery, no surgical intervention is currently planned.

This case highlights the infrequent sequelae of neck injuries and the role of the national cleft service in cases of acquired non-cleft velopharyngeal insufficiency.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patient's permission

Ethic approval not required. Consent was obtained for publication.

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