CASE REPORT

Simultaneous dysphagia and stridor: an unreported presentation of hypocalcaemia

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Abstract

Hypocalcaemia is a well-recognized complication of total thyroidectomy surgery. Patients who develop post-operative hypocalcaemia often report symptoms of neuromuscular instability including peripheral numbness and/or tingling. In severe cases, laryngospasm with stridor and bronchospasm can occur. We present the first reported case in the literature, to our knowledge, of a 58-year-old male presenting with intermittent exertional stridor, dysphonia and dysphagia following thyroid surgery 2 years previously. Clinical and radiological investigations were unremarkable. Pre-operative screening for a planned panendoscopy to investigate his symptoms highlighted a profound hypocalcaemia (adjusted calcium 1.42 mmol/l). Following calcium replacement therapy, his symptoms subsided. There is an absence of literature describing both dysphagia and stridor synchronously. We not only advocate regular routine follow-up and compliance assessments for such patients but also the consideration of hypocalcaemia as a differential in any patient presenting with such symptoms following any thyroid surgery.

INTRODUCTION

Hypocalcaemia is a well-recognized complication of total thyroidectomy surgery. Patients who develop post-operative hypocalcaemia often report symptoms of neuromuscular instability including peripheral numbness and/or tingling. We present the first reported case in the literature, to our knowledge, of a 58-year-old male presenting with intermittent exertional stridor, dysphonia and dysphagia following thyroid surgery 2 years previously. Clinical and radiological investigations were unremarkable, and pre-operative screening for a planned panendoscopy highlighted a profound hypocalcaemia. Following calcium replacement therapy, his symptoms significantly subsided, and he was referred to the endocrinology team for long-term follow-up.

CASE REPORT

A 58-year-old male was referred to the ENT outpatient department on an urgent cancer/2 week wait pathway with a history of intermittent exertional stridor, dysphonia and dysphagia, on the background of a normal upper gastrointestinal endoscopy. Prior to his outpatient review, there had been multiple attendances to the emergency department with similar symptoms, but no formal endoscopic evaluation of his upper aerodigestive tract had been undertaken.

His clinical history was unremarkable, with the exception of a long smoking history. His past medical history comprised of a previous partial thyroidectomy for a multinodular goitre in 2006, followed by a revision thyroid surgery including a right hemithyroidectomy in 2017 for further compressive symptoms. There were no reported allergies. He was prescribed thyroxine and calcium supplements due to his previous thyroid surgery. On further questioning, it became apparent the patient had not been compliant with his calcium medication.

Head and neck examination demonstrated scars from the previous thyroid surgery, and nasendoscopy yielded some tongue base fullness, with symmetrical cord mobility and...

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no obvious evidence of malignancy. An urgent computed tomography scan of the neck and thorax was requested and demonstrated a small mucous retention cyst within the tongue base, residual thyroid tissue within both thyroid beds, but no convincing evidence of a malignant process of the upper aerodigestive tract. Due to the ongoing nature of his symptoms, he was listed for a panendoscopy under a general anaesthetic.

Routine haematological and biochemical tests were undertaken at a pre-operative assessment clinic, which revealed an adjusted calcium level of 1.42 mmol/l, and undetectable parathyroid hormone (PTH) level. The patient was contacted with the results and admitted overnight for assessment, monitoring and treatment. Paraesthesia of both upper limbs was reported, with a prolonged QT interval seen on his electrocardiogram, and thus cardiac monitoring was commenced. He was treated with intravenous calcium over 48 h and converted to oral Sandocal 1000 three times per day and Alfacalcidol 1 microgram daily. Once the adjusted calcium had been normalized, the patient was discharged, pending a further review within the outpatient setting, where he reported a drastic improvement in his symptoms. Panendoscopy findings were unremarkable, and a routine endocrinology review was requested on discharge.

**DISCUSSION**

Both stridor and dysphagia can have a wide range of differentials depending on their onset and duration. Acute onset stridor with associated dysphagia often implies an infective or inflammatory process, whereas a more insidious and chronic onset is more suggestive of a malignant process, requiring further urgent investigations. Hypocalcaemia is an uncommon cause of such presentation within the adult population, with sparse literature describing them in isolation or as a combination.

Hypocalcaemia is a well-recognized complication of total or completion thyroid surgery. The position, variable location and difficult visualization of the parathyroid glands, may result in disruption of the blood supply and hypoparathyroidism resulting in hypocalcaemia [1]. Post-thyroidectomy hypoparathyroidism has a reported incidence in the range of 1–15% [2]. Other causes of post-operative hypocalcaemia include ‘hungry bone syndrome’, where when the stimuli for high bone turnover (e.g. high PTH or thyroid hormone levels) is eradicated, rapid remineralization occurs [1].

Characteristic features of acute hypocalcaemia include neuromuscular irritability, with patients developing perioral paraesthesia and peripheral numbness. Muscular spasms may progress to tetany. In severe instances of hypocalcaemia, laryngospasm with stridor and bronchospasm may also occur [1]. Laryngospasm secondary to hypocalcaemia is commonly seen in the paediatric population given the smaller diameter of the upper airway, and to a lesser extent in adults [3, 4]. Cardiac manifestations of acute hypocalcaemia include prolongation of the QT-interval and T-wave abnormalities on ECG. Additionally, changes to smooth muscle function can lead to dysphagia, abdominal pain, biliary colic and wheeze [1]. When admitted for assessment and correction of their profound hypocalcaemia, our patient reported the presence of all the aforementioned symptoms, and although arrangements had been made for long-term follow-up, compliance was substandard. The nature of the presentation, as well as the ECG changes, highlights the importance of rigorous immediate and long-term monitoring of PTH and serum calcium levels given the potential for serious morbidity and/or mortality.

In conclusion, whilst a solitary case report linking hypocalcaemia and dysphagia following a total laryngectomy exists, there is an absence of literature describing both dysphagia and stridor synchronously [5]. We not only advocate regular routine follow-up and compliance assessments for such patients but also hypocalcaemia as a differential in any patient presenting with such symptoms following any thyroid surgery.

**CONFLICT OF INTEREST STATEMENT**

None declared.

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