

Lingual Haematoma : Yet Another Unusual Cause of Upper Airway Obstruction

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Summary

An episode of acute upper airway obstruction was caused by a lingual haematoma, when a patient with end stage renal failure suffered a hypocalcaemic fit and bit his tongue. The large haematoma and profuse bleeding caused the patient to obstruct and become hypoxic, and rendered laryngoscopy and intubation impossible, requiring an urgent tracheostomy to secure the airway.

Key Words: Upper airway obstruction, Lingual haematoma, Chronic renal failure, Hypocalcaemic fit

Introduction

There have been a few reports of lingual haematomas developing after anticoagulation with streptokinase¹⁻³ following minor intraoral trauma. This is an interesting case of a patient with some of the numerous complications associated with chronic renal failure which in combination resulted in the rather unusual cause of an acute upper airway obstruction. The management of upper airway obstruction is also discussed.

Case report

The patient was a 26-year-old man with end stage renal failure, who was brought to the Accident and Emergency Department after he suffered a convulsion earlier that morning. He was restless and uncooperative and unable to speak because of a swelling of the tongue. Documentation carried by the patient revealed that he was on regular haemodialysis and was taking calcium carbonate, α - calcidol and ferrous sulphate. Examination showed a slightly obese man with a haematoma of the tongue and swelling of the right side of the neck. The patient was unable to close his mouth because of the lingual haematoma, but was not in respiratory distress. His blood pressure was 220/120

mmHg, pulse 140/min and the pulse oximeter was reading at 93%. No other abnormality was noted.

Investigations at that time revealed elevated urea, creatinine and phosphate levels of 24.8 mmol/l, 1421 μ mol/l and 2.6 mmol/l respectively, low calcium of 1.44 mmol/l and magnesium 1.11 mmol/l. Albumin was normal, blood sugar 7.0 mmol/l and serum potassium 5.0 mmol/l. Other electrolytes were essentially normal as well. The electrocardiogram showed tall T waves, but normal QT interval with no other abnormality. The arterial blood gas revealed a oxygen tension of 65.8 mmHg, carbon dioxide tension of 35.3 mmHg and standard bicarbonate of 22.6 mmol/l breathing room air. He was subsequently diagnosed to have chronic renal failure with hypertension, hypocalcaemia and hyperkalaemia (on the basis of the ECG).

Immediate management included intravenous insulin with 50% dextrose, 10% calcium gluconate and sublingual nifedipine. He was given oxygen via nasal prongs and admitted to the medical ward with the plan for haemodialysis.

Three hours later, in the ward, the patient was

conscious and breathing comfortably, when he suffered a generalised convulsion which lasted about 2 minutes. He was then noted to be struggling to breathe and the pulse oximeter monitoring showed a precipitous drop in the oxygen saturation to less than 70%. He had bitten his tongue again which began to bleed profusely, became swollen and caused an obstruction of his upper airway. A nasopharyngeal airway was inserted which restored the patency of his airway, enabling his oxygen saturation to improve to 90 – 94%. Unfortunately, when he began to regain consciousness, he was very restless and attempted to pull out his intravenous cannulae, so 10 mg intravenous diazepam was administered which rendered him unconscious. By this time the anaesthetist had arrived and on assessment of his airway, the bleeding was found to be from a 2 cm laceration at the base of the tongue. The lingual haematoma had extended, causing the tongue to fill the whole oral cavity, and spread to the floor of the mouth, making laryngoscopy and orotracheal intubation impossible.

The decision was made to establish a surgical airway immediately because of the tenuous nature of the airway and the profuse bleeding. A tracheostomy was subsequently performed with difficulty, under local infiltration, because of the patient's short, thick neck. Platelet transfusion was also given quickly to arrest the bleeding. Investigations showed that his haemoglobin was now 5.4g%, platelet count $65 \times 10^9/l$, white blood count $23.6 \times 10^9/l$, prothrombin ratio 1.18, partial thromboplastin time 54.7 s compared to the control of 33.0 s and total calcium was 1.61 mmol/l. Hydrocortisone therapy was started in view of the haematoma and oedema.

The patient remained stable over the next 2 days, during which time his blood pressure settled, he was haemodialysed and the coagulopathy and hypocalcaemia were corrected. When the patient was able to speak again, he complained of pain in the back and right arm. Obvious bruises had by now appeared on his right chest and arm, and an X-ray revealed a previously undiagnosed hairline fracture of the spine of his right scapula, which was probably sustained during the episode of convulsion.

Discussion

Chronic renal failure is associated with a variety of complications, one of which is abnormal calcium and phosphate homeostasis. Poor absorption of dietary calcium and renal phosphate retention associated with severe renal failure results in hyperphosphataemia, which further lowers the serum calcium concentration. This can result in neurological complications such as convulsions, cardiac arrhythmias, stridor and various forms of bone disease including osteoporosis, the last rendering patients vulnerable to fractures, as was demonstrated by this patient.

Lingual haematomas are uncommon but have previously been reported in patients on streptokinase therapy occurring either spontaneously¹, or after minor trauma caused during attempted tracheal intubation² and a dental injection³. In this patient with chronic renal failure, the coagulopathy was due to decreased platelet adhesiveness which is associated with uremia. This probably led to the unusually large haematoma of the tongue when he bit it, sufficient to cause an acute upper airway obstruction. The profuse bleeding associated with the abnormal platelet function also contributed to the airway emergency.

It is apparent that oropharyngeal and lingual haematomas are potential risks in any patient with coagulopathies, whether in association with a disease state as in this patient, or with medical therapy. Thus, in these patients, particular care must be employed when any procedure or manipulation of the oropharyngeal region is attempted. Intraoperative heparinisation in cardiac and vascular surgery is routine and the many patients on low dose aspirin and prophylaxis against deep vein thrombosis peri- and post-operatively may be at increased risk of developing this life-threatening complication.

Management of an upper airway obstruction caused by a lingual haematoma is a challenge. Generally, the obstruction occurs gradually. The nature of the obstruction precludes direct laryngoscopy and oral intubation. Awake fiberoptic laryngoscopy and intubation is a feasible line of management in a stable and cooperative patient but has its problems. The nasal

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route for intubation is generally not recommended in the presence of a coagulopathy and if not performed with due care can result in bleeding which could complicate the intubation procedure as well as further compromise the patient's airway. Also, this management option would not be viable in the presence of active oral bleeding. Conservative management with oxygen therapy is another option, bearing in mind that if deterioration occurred rapidly, the option of a controlled awake fiberoptic intubation may be lost. Finally, tracheostomy. In a stable, partially obstructed patient, one would try to avoid a tracheostomy, in view of the transient nature of the obstruction. However, this was felt to be the only option for this patient who was hypoxic due to an upper airway obstruction, unconscious with intraoral

bleeding and unable to protect the airway. Airway patency can be temporarily achieved using a nasopharyngeal airway. Despite the fact that insertion of the nasopharyngeal airway is likely to cause haemorrhage, provision of a life saving patent airway is the only consideration in a totally obstructed patient. Subsequently, a tracheostomy can be done urgently to secure the airway as well as to protect it from aspiration of blood and gastric contents.

General anaesthesia is administered with great caution, as is sedation, in any upper airway obstruction, as this can lead to inability of the patient to maintain his airway and convert a partial obstruction to a complete one.

References

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Neural Leprosy – A Case Report

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Summary

Neural leprosy is rare. This is a report of a 63-year-old Indian man who had long standing multiple peripheral neuropathy. The slit skin smear for acid-fast bacilli of *Mycobacterium leprae* was positive. The skin and nerve biopsies were normal. He was treated with rifampicin, dapsone and clofazimine.

Key Words: Neural leprosy, Slit skin smear, Nerve biopsy