A Report of Metallic Foreign Bodies in the Neck Mimicking Parotitis

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Abstract We present a report of a patient with signs and symptoms of acute unilateral parotitis. The patient was subsequently found to have multiple metal wires embedded within the right sternocleidomastoid muscle, with no evidence of preceding trauma. Although the etiology was unclear, a childhood injury was suspected, highlighting the need for a high index of suspicion for foreign bodies in any child presenting with unexplained persistent aerodigestive tract symptoms.

Keywords foreign bodies; acute parotitis

1. Introduction

The late presentation of a foreign body in the neck is rare. Different etiologies described in the literature include direct penetration, ingestion with aerodigestive tract perforation, and iatrogenic causes [5, 7, 13]. The level of associated localized inflammatory response is determined by the nature of the foreign body, with more inert materials, such as certain metal alloys being associated with relatively little tissue reaction, in contrast to organic materials, which induce strong inflammatory responses [15].

We report an acute inflammatory reaction to multiple metal wires embedded in the neck, mimicking acute parotitis, without any clear causative event to explain the presence of the foreign bodies.

2. Case presentation

A 56-year-old lady presented with a 2-week history of a painful, right-sided neck swelling. The pain was exacerbated by eating, and was consequently associated with a reduced oral intake. Except for previous dental extractions, past medical history was unremarkable. There were no psychiatric or social concerns of note. Initial examination of the neck revealed a tender swelling posterior to the angle of the jaw, in the vicinity of the right upper sternocleidomastoid muscle and right tail of parotid gland. There was no associated lymphadenopathy and no visible neck scarring. Examination of her upper aerodigestive tract was otherwise normal. Inflammatory markers on presentation were relatively unremarkable with a white cell count of $8.0 \times 10^9/L$ and a C-reactive protein concentration of 14 mg/L.

Figure 1: Computed tomography image with 3D reconstruction of the patient’s head and neck. Arrows indicate what appear to be two metallic objects at the angle of the jaw on the right-hand side.

An initial diagnosis of acute right parotitis was made and the patient commenced on intravenous Co-amoxiclav 1.2 g TDS. When the apparent parotitis failed to settle, an ultrasound scan of the neck was undertaken. This did not reveal any abnormality, within the parotid. Therefore, CT imaging of the neck was arranged. This demonstrated inflammation of the right sternocleidomastoid muscle, and what appeared to be two separate linear metal foreign bodies (FBs) within the muscle itself. The FBs were aligned parallel to each other and lay in a near horizontal plane (Figure 1).

The patient’s pain improved after 3 days and plans were made to explore the right neck when the acute episode had settled. Through an upper cervical skin crease incision, the anterior border of sternocleidomastoid was dissected, preserving the greater auricular nerve, and the body of the muscle was explored. Three metal wires were identified together at the more anterior site and a solitary wire was found at the posterior site. The wires measured approximately 2 cm in...
and the authors of this case report feel a similar etiology cases, an unrecognized childhood injury was proposed, detected following the onset of arrhythmias [9]. In all these old gentleman with an iron fragment in his myocardium molar on routine dental radiology [6], and a 78-year-old child found to have a metallic screw in his primary presentation in the region of 12–15 years [8]. Furthermore, there is evidence of acute inflammatory reactions to stainless steel implants, sometimes many years after implantation. This has been attributed to overload of iron oxides in the tissues, perhaps with a threshold being reached leading to an inflammatory reaction [15].

This patient appears to be the first reported case in the literature of a neck foreign body of unknown etiology. Although discussing an unusual presentation, it highlights the importance of a thorough history and examination in pediatric patients. Following aspiration or ingestion of a foreign body, a child may initially display symptoms of coughing, gagging or choking. However, these symptoms can disappear as protective aerodigestive tract reflexes become suppressed due to overstimulation [12]. It is therefore particularly important to have a high index of suspicion for unwitnessed foreign body ingestion in children, in order to prevent outcomes similar to those discussed in this case report.

3. Discussion

Foreign bodies in the upper aerodigestive tract are a common presentation to the Ear, Nose, and Throat department, with patients typically presenting following accidental placement, ingestion or inhalation of the foreign body. Perforation of the aerodigestive tract by these foreign bodies is rare, occurring in less than 1% of cases [5], while migration of the foreign body outside of the lumen is less common [11]. Several case reports describe migratory aerodigestive foreign bodies being found within various soft tissues of the neck, including the retropharyngeal and parapharyngeal spaces, the thyroid gland, the carotid sheath, the common carotid artery, and the sternocleidomastoid muscle [1,2,5,10,11,14]. However, in all of these cases there was a recent history consistent with foreign body ingestion and pharyngeal wall perforation.

Penetrating neck injuries can also result in foreign body retention in the tissues, in a similar wide variety of locations [3,4,7]. Patients will either present immediately following a trauma, or after a delay, with persistent localized inflammation around the foreign body, and a recognizable traumatic etiology [3]. Literature review has highlighted a few isolated case reports describing the discovery of a foreign body with no prior history of trauma. These include a 6-year-old child found to have a metallic screw in his primary molar on routine dental radiology [6], and a 78-year-old gentleman with an iron fragment in his myocardium detected following the onset of arrhythmias [9]. In all these cases, an unrecognized childhood injury was proposed, and the authors of this case report feel a similar etiology is most likely. If that is the case, this lady could have had metal fragments in her body for 40–50 years. This makes the acute nature of her presentation particularly unusual. The human body is a hostile environment for metallic foreign bodies: a highly oxygenated, saline solution at a temperature of 37 °C. Therefore, it would be expected that corrosion of metallic foreign bodies would occur rapidly, with progressively worsening symptoms. Corrosion had clearly occurred to the foreign bodies in this case report, with the “rusted” appearance suggesting an iron-based compound. The prolonged dormant period would be in keeping with literature analyzing metallic alloys used for medical devices, where stainless-steel implants can have a lifespan in the region of 12–15 years [8].

Figure 2: The four metallic foreign bodies displayed following surgical removal.

maximum length and were surrounded in a corroded coating (Figure 2). The wound was irrigated and closed with absorbable sutures. The patient was discharged the same day and made an uneventful recovery.

References


