

An Impacted Foreign Body of Porcupine Spine in Neck

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Abstract

Introduction: Trauma and foreign body impaction in the neck can be dangerous because of high chances of injury to vital structures like the major blood vessels, airway, digestive tract and nerves located in the neck. Hence, early diagnosis and treatment is important to prevent severe morbidity and mortality.

Case Report: A 24-year old male from Rolpa had presented with complaint of painful swelling over right side of neck for a week. He had past history of encounter with porcupine a month back. Ultrasonography of the neck revealed impaction of foreign body in the right lateral neck (sternocleidomastoid muscle) with pus and granulation tissue around it. He was then admitted and exploration under general anesthesia was done and porcupine spine was removed.

Keywords: Foreign body neck, porcupine spine

Introduction

Foreign bodies may be ingested, inserted into the body cavity or deposited inside by a traumatic or iatrogenic injury.¹ Any penetrating foreign body in the neck can be dangerous because of the chances of injuring the vital structures located in the neck. The overall mortality of penetrating neck injuries is at the rate of 9 %.² Hence, early detection and removal of any foreign body is important to avoid dangerous complications. We present a case where a porcupine spine had accidentally penetrated the neck and was located over the right sternocleidomastoid muscle.

Case Report

A 24-year old male from Rolpa had presented to the Outpatient department of ENT-HNS of Rapti Academy of Health Sciences with chief complaints of painful swelling over right side of neck for one week. He had a history of similar episode two weeks prior to this episode for which he had undergone incision and drainage at local health post. There was no history of dysphagia, odynophagia, shortness of breath and difficulty in neck movement. He had given history of trauma by multiple porcupine spines to whole body about a month back in forest while going hunting for porcupine. There was no past and family history of tuberculosis.

His vitals were normal. There was a swelling about 3 by 2 cm square over right side of neck at midpoint of right sternocleidomastoid muscle region which was soft, fluctuant and tender. The overlying skin had a linear scar mark with redness and granulation over the skin. There were two external openings with discharge as well which was mucopurulent in nature. His ear, nose, oral cavity, oropharynx and nasopharyngolaryngoscopy examination were normal.

His ultrasonography report showed a linear 3.7cm structure foreign body oriented obliquely lying around 0.7cm deep to the skin surface of right side of neck with minimal collection around it. He was admitted for intravenous antibiotics and planned for exploration under general anesthesia after five days of IV antibiotics. A linear incision along the skin crease of about 3 cm was given from two finger below the right ear lobe. Then sub-platysmal flap elevated on upper and lower side. Then, on dissection of sternocleidomastoid muscle fibers, a black coloured hard structure was visualized impacted within the muscle fibers that was located vertically along the muscle fibers. (Figure 1 and 2) It was surrounded by granulation tissue with minimal mucopurulent discharge. It was removed and closure was done in layers. The patient underwent dressing on the following day with IV antibiotics till fifth post operative day. Suture removal was done on the tenth post operative day. His hospital stay was uneventful.

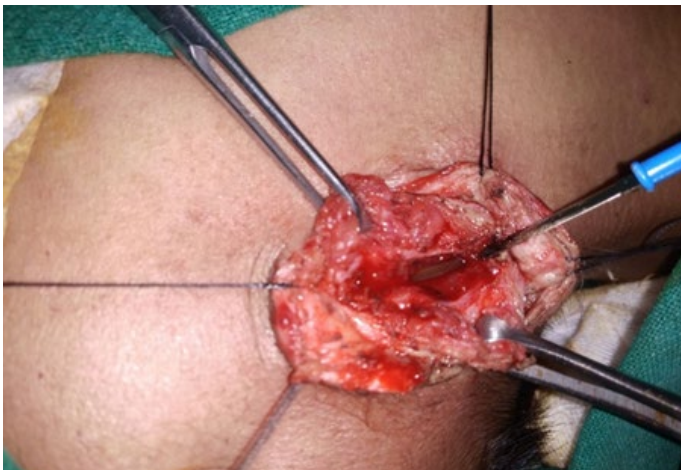


Fig 1: White arrow showing foreign body in sternocleidomastoid muscle fibers



Fig 2: Porcupine spine

Discussion

Foreign body impaction in the head and neck region may result from either a traumatic or an iatrogenic injury.³ Penetrating injuries to neck should be managed timely as it may result to injury to vital structures of neck.

The neck contains a constellation of a number of vital structures such as vascular, aero- digestive and neural, being protected by strong musculature, tough fascia and related bones.¹ Anatomically, the neck can be divided into three major zone; zone I (below the level of cricoid cartilage), zone II (area between the cricoid cartilage and angle of mandible), zone III (area above the level of the angle of mandible).⁴ Among these, injuries to anatomic zone II are the most common constituting about 42% of neck injuries. This zone contains the internal and external carotid arteries, jugular veins, pharynx, larynx, esophagus, recurrent laryngeal nerve, spinal cord, trachea, thyroid and parathyroid glands. This patient had foreign body in zone II site of neck on the right side.

The clinical presentation of the patient may vary from no symptoms to pain over the neck to severe bleeding and airway injuries. In case report by Luo et al, there was a chopstick stabbed into patient's neck which had presented with rupture of common carotid artery and internal jugular vein three days after the incident.⁵ Hence, residual foreign body of neck may result in life threatening lethal hemorrhage from delayed rupture of blood vessels. Even though this patient had impacted foreign body over lateral side of zone II, the vertical orientation of the foreign body might have prevented damage to great vessels of the neck. Hersman et al, reported in a retrospective study that overall mortality rate in penetrating neck injuries is 9%.²

The usual complications of penetrating neck injury are vascular trauma in 25% with mortality rates approaching 50%. Tacheo-bronchial injuries may be observed in less than 10% to as high as 20% and a mortality rates of as high as 20% is also reported.¹

The diagnosis can be done by proper history taking, physical examination and radiological investigations. There was delay in diagnosis in this case due to lack of detail information regarding his exposure to porcupine during the hunt. He had pain over the neck following his encounter with the porcupine without any gross noticeable external injury. The entry point over the skin was very small to be noticed. He had presented a month later with right lateral neck swelling which was treated with direct incision and drainage without ultrasonography. The delay in diagnosis may be caused by lack of use of radiological tools for diagnosis.

Radiological investigations like plain radiographs and ultrasonography of neck can help in detecting radiopaque foreign bodies and provide an insight to the location and size of foreign body.³ CT scan of neck with fine 1mm cuts is the investigation of choice to predict the exact location of the foreign body and its relationship to vital structures in neck.⁶ However, due to high cost of it, ultrasonography and X-rays are preferred first for diagnostic purpose. MRI scans are very useful in detecting non metallic foreign bodies.⁷

However, it is advisable to perform an X-ray or CT imaging before MRI to rule out the occurrence of metallic foreign bodies.⁴

Data from Ferguson and colleagues suggest that, in the absence of hard vascular signs with a penetrating neck injury, angiography is not necessary.² The choice of radiological investigation depends on the physical condition and financial status of the patient. As this patient had no physical signs of airway, vascular, neural and aerodigestive tract damage, only ultrasonography was done.

Early detection of foreign body in neck is essential to avoid injury to vital structures of neck. The protocol of airway, breathing and circulation should be followed. This patient had developed abscess and granulation tissue at the site and so was admitted and given preoperative intravenous antibiotic. The use of preoperative antibiotics may help in proper differentiation of anatomical sites and plane which will aid in surgical exploration. Removal of impacted foreign bodies in the neck follows meticulous surgical exploration of the laceration site.⁷ A good anatomical knowledge of the neck is necessary to successfully remove any foreign bodies impacted in the neck.

Foreign bodies in the neck can be life threatening due to vital structures located in it. Early diagnosis and evaluation is necessary to avoid complications. Proper detail history taking and physical examination should be done. Radiological investigation should also be used to detect site of foreign body and its relation to vital structures in the neck. Surgical exploration and removal of foreign body should be done on time to prevent life threatening complications.

Consent

Written informed consent was obtained from the patient for publication of his case and related photographs.

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