



## Unsuspected Foreign Body in Parotid Gland as a Cause of Facial Palsy: A Rare Case Report

Abhijeet Singh, Anand S, Gyan Ranjan Nayak and Naresh Panda\*

Department of Otolaryngology Head and Neck Surgery, Post Graduate Institute of Medical Education and Research, India

### Abstract

Parotid gland injuries are often associated with a number of sequelae. Assault and accidents contribute to nearly 90% of the parotid gland injuries. We report a case of an 18 year old male who presented with a history of trauma to the left side of face six weeks back, which he sustained after a wooden log fell from a height of about 10 feet. Patient developed delayed onset weakness over the lower part of face after three weeks of trauma. CT scan revealed the possibility of a foreign body within the sinus tract.

**Keywords:** Parotid foreign body; Discharging sinus; Organic foreign body; Parotid sinus

### Introduction

Parotid gland injuries are often associated with a number of sequelae. Assault and accidents contribute to nearly 90% of the parotid gland injuries. Major sequelae following injury include sialoceles and fistulae. Conservative management is sufficient in more than 50% of the cases and rest of the cases require surgical drainage [1]. Stenson's duct when accessible should be repaired primarily. Conservative management options include the use of antisialogogues, elastic bandages, and refrain from oral intake until the injury is healed [2].

Very few cases require parotidectomy [3]. A thorough knowledge of the structure and function of the parotid region is essential in management of these injuries. We report a case of an 18-year old male with a discharging sinus and swelling in the left parotid region with ipsilateral lower motor neuron facial palsy who failed to respond to conservative management.

### Case Presentation

We report a case of an 18 year old male patient who presented to our outpatient department with a history of trauma to the left side of face six weeks back, which he sustained after a wooden log fell from a height of about 10 feet. At that time patient had a small laceration over the left parotid region. A small piece of wood was removed from the wound site by a physician at a primary care Centre and started on oral antibiotics. Two weeks later patient started having purulent discharge from the wound (Figure 1). Patient developed delayed onset weakness over the lower part of face after three weeks of trauma for which a magnetic resonance imaging (MRI) was ordered by the physician and subsequently referred to our Centre. Clinical examination revealed purulent discharge from the sinus with diffuse induration over left parotid region, which was extending into left side neck as well. Patient had House-Brackmann Grade III lower motor neuron facial palsy involving the buccal and marginal mandibular division of facial nerve on the left side (Figure 2). Oral cavity, neck and otological examination were unremarkable. MRI revealed a linear fluid distended sinus tract in left intra parotid region involving the deep and superficial lobe of parotid reaching up to skin surface (Figure 3). A contrast enhanced computed tomography scan (CT) was done after discussing MRI with the radiologist. CT scan revealed the possibility of a foreign body within the sinus tract (Figure 4).

Patient was then taken up for surgical exploration under general anesthesia. Modified Blair's incision was made including the sinus tract. Intra-operatively, a piece of wood was found embedded in the parotid parenchyma and was removed (Figure 5). Cavity was thoroughly irrigated with diluted antibiotic solution and wound was closed over a corrugated rubber drain. Patient made an uneventful recovery and was discharged on oral antibiotics after five days (Figure 6). At four week follow up facial palsy had recovered completely (House Brackmann Grade I) (Figure 7).

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#### \*Correspondence:

Naresh Panda, Department of Otolaryngology Head and Neck Surgery, Post Graduate Institute of Medical Education and Research, Chandigarh, India, Tel: +91-172-2756760;

E-mail: npanda59@yahoo.co.in

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Figure 1: Discharging sinus in left parotid region.



Figure 2: Left Grade III LMN facial palsy.



Figure 3: Left Grade III LMN facial palsy.

## Discussion

Injuries to salivary glands remain uncommon, with the number one cause being penetrating trauma. Other causes of acute injuries include blunt trauma and blast injuries. Salivary gland injuries are relatively uncommon, only a few large series exist. A great deal of experience comes from injuries sustained during World War II [4] (Figure 8).

Optimal outcome requires early recognition with an adequate evaluation, directing proper management. A thorough history must be obtained whenever possible. Important questions include timing and nature of injury as well as other injuries. Valuable information can be gathered by determining if the patient has been able to eat



Figure 4: MRI revealed a linear fluid-distended sinus tract in left parotid region.

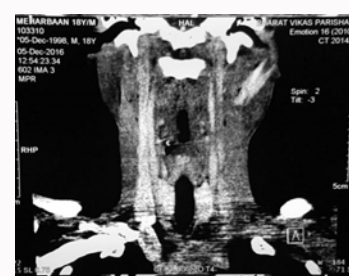


Figure 5: CECT Neck - Foreign body in left parotid region (Coronal).



Figure 6: CECT Neck - Foreign body in left parotid region (Coronal).



Figure 7: Intra operative.

after sustaining the injury and the effect this has on the salivary tissue. Additionally, if there has been drainage from the wound, the character of this drainage can be suggestive. Examination requires inspection of the gland and surrounding structures while comparing it with the contralateral side for symmetry. Surrounding structures include overlying skin, oral mucosa, and dental structures and complete otological examination is indicated. Electroneurography and electromyography represent a more sophisticated means of



**Figure 8:** Wooden foreign body.



**Figure 9:** Postoperative day 5.

evaluation of facial nerve trauma. If degeneration of the facial nerve exceeds 90% on electroneurography and it is within a period of three weeks after the injury, surgical exploration may be indicated. After the three-week period, electromyography may be indicated to determine if a nerve is recovering [5] (Figure 9).

Magnetic resonance imaging is the gold standard imaging tool for parotid neoplasms and parotid diseases. It is not necessarily the

imaging study of choice for trauma to the parotid gland. Both CT coronal and axial provide the best evaluation of the bony structure. Additionally, CT can give excellent soft tissue delineation.

Penetrating injury to the parotid gland, in addition to involving the parenchyma of the gland, also can involve Stensen's duct or the facial nerve. The anterior border of the masseter muscle is an important landmark because lacerations posterior to this can injure the duct. Although a superficial or total parotidectomy would eliminate the salivary source, the morbidity in such a compromised bed may outweigh its benefits. When identified, injuries to Stensen's duct should be primarily repaired. Missing a duct injury may lead to the development of a posttraumatic fistula or sialocele.

## Conclusion

Post traumatic chronic discharging sinus along with facial palsy should be evaluated with a high index of suspicion for retained foreign body. Evaluation with appropriate imaging may guide towards proper surgical planning.

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