Removal of an Intra-parotid Foreign Body without Parotidectomy and Dissection of the Facial Nerve

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ABSTRACT

Educational objectives: At the conclusion of this presentation, the participants should be able to discuss how imaging and intra-operative facial nerve monitoring may be used in the removal of selected intraparotid foreign body without parotidectomy and dissection of the facial nerve.

Objectives: 1) To present a rare case of a metallic intraparotid foreign body introduced as a projectile; 2) to discuss how CT images were used to guide the surgical exploration; and 3) To discuss the surgical approach used to retrieve an intraparotid foreign body without facial nerve dissection.

Study Design: This is a clinical case report with a review of literature

Methods: We present the pertinent literature and physical examination findings. We discuss the CT images. The technique of surgical exploration and foreign body retrieval is presented.

Results: This is the case of a man who presented to the emergency department with a metallic foreign body lodged in the parotid introduced accidentally as a projectile. CT images were analyzed and the patient underwent successful removal of the intraparotid foreign body with out parotidectomy and facial nerve dissection via a posterior approach and using facial nerve monitoring.

Conclusion: Selected intraparotid foreign bodies may be removed without parotidectomy and facial nerve dissection if imaging shows it can be approached safely and intra-operative nerve monitoring is used.

INTRODUCTION

Identification and preservation of the facial nerve branches is always a concern when dealing with disease or injury to the parotid. Modern imaging and equipment to monitor the facial nerve integrity intra-operatively now is commonly used to try avoiding this complication. We present a case of an intraparotid foreign body where the definitive surgical management was changed by careful analysis of the radiologic images and the use of intra-operative nerve monitoring.

MATERIALS AND METHODS

Study Design: This is a clinical case report

HISTORY AND PHYSICAL

This is the case of a 65 year old male who was cutting a piece of wood with a circular saw when he suddenly felt a sharp pain in the area of his right cheek. Puncture bleeding was noted in his cheek and he sought consult with the Emergency Room. On presentation, he had a puncture wound in his lower cheek/right mandibular area, slight swelling, tenderness, pain on opening the jaw and talking, limitation of jaw opening secondary to pain, pain around right ear and an intact facial nerve function.

Fig 1 Puncture wound right cheek

IMAGING

Plain film imaging was requested by the Emergency Room Physician (Fig 2 & 3). This revealed a metallic foreign body consistent with a nail embedded in the soft tissues of the face lateral to the ascending portion of the mandible. The otolaryngology team was called for consultation.

A CT Scan of the Head/Neck was done (Fig 3 & 4) revealing a metallic foreign body embedded in the substance of the Parotid. The foreign body was 1 1/2 cm deep at its most superficial portion and was deep to the level of the parotid fascia. Inferiorly the foreign body extends out of the parotid substance and penetrates the sternocleidomastoid muscle.

Fig 2
Fig 3
Fig 4
Fig 5

OPERATION

The patient was counseled on retrieval of the foreign body with possible parotidectomy and facial nerve dissection and the patient agreed and gave his informed consent.

The NIM-Response® 2.0 Nerve Integrity Monitoring System (Medtronic, Jacksonville, Fl) was used.

A modified Blair incision was marked out and injected however only the inferior limb was incised and carried through the subcutaneous tissue until the level of the sternocleidomastoid muscle (SCM). The SCM was then dissected off the parotid and retracted posteriorly. A nail was then encountered in the parotid and piercing the SCM as predicted by the CT Scan. The nail was then manipulated prior to extraction to see if there will be any stimulation of the facial nerve. When this proved negative the nail was then slowly retrieved without difficulty. Findings revealed a 4 cm nail. The wound was then irrigated and closed in layers.

The patient did not have any complications and had full facial nerve function post operatively. This was maintained on subsequent follow-up.

CONCLUSIONS

Knowledge of anatomy, advances in imaging and nerve integrity monitoring allows for extraction of selected intraparotid foreign bodies without dissection of the facial nerve.

REFERENCES


DISCUSSION

Intra-parotid foreign bodies are rare and have been described following traumatic injuries and have necessitated parotid and facial nerve dissection in the process of extraction.¹² Metalic foreign bodies are easily visualized in CT scan images and in this case enabled us to see the posterior inferior extension of the nail. This made it possible to encounter it in the plane the SCM and the parotid.

Use of the facial nerve monitor in parotidectomy is still controversial with several studies for¹³ and against¹⁴ its routine use. The possible causes of paresis in spite of negative activity in the NIM maybe injury during the dissection or devascularization. Use in procedures where dissection of the facial nerve is not to be performed, like in this case, would therefore indicate stimulation of the nerve by direct stimulation by the foreign body during the extraction process and should predict a good outcome.

For this case we decided to extract the foreign body without parotid exploration and nerve dissection once we confirmed that it was a nail because of the relative smoothness of the nail.

Fig 6. Nail identified in plane between SCM and Parotid

Fig 7. Nail being extracted with NIM guidance

Fig 8. The 4 cm projectile intra-parotid foreign body