An unrecognized foreign body in the parotid gland after trauma

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Abstract. An unrecognized foreign body in the parotid gland after trauma. Objective: Foreign bodies within the parotid gland retained after trauma are rarely observed, due in part to ease of detection. Few, however, particularly wooden foreign bodies, may not be identified clinically and radiologically.

Case: A 44-year-old male was admitted complaining of recurrent swelling and pain in the left parotid gland with recent history of penetrating parotid trauma and foreign body removal. Ultrasonography revealed a high degree of parenchymal heterogeneity and an $18 \times 5.7$ mm linear mass shadow. Following superficial parotidectomy, an approximately $1 \times 2$ cm wooden fragment that was buried in the masseter muscle and surrounded by granulation tissue was palpated and extracted.

Conclusion: Any suspicion of a residual foreign body after penetrating parotid gland trauma can be clarified with a detailed radiological examination, which may provide further guidance for treatment. The treatment modality of parotid foreign bodies is early surgical exploration, and in delayed cases, superficial parotidectomy may be needed.

Introduction

A foreign body within the parotid gland secondary to an isolated penetrating parotid gland trauma is an unusual condition.\(^1\)\(^3\) In the rare event that the foreign body cannot be removed during the first intervention, the subsequent inflammatory reaction provoked by the foreign body may mimic parotid tumour or may cause chronic sialadenitis.\(^4\) Total extraction of the foreign body, therefore, is a must, and if necessary, should be proved radiologically.

This report presents a parotid mass that developed secondary to a residual piece of wood within the parotid gland, and the management of this condition was assessed in the light of the medical literature.

Case report

A 44-year-old male was admitted to the outpatient clinic suffering from swelling and pain in the left parotid gland. Ten months prior, in a work-related accident, a small piece of wood had ejected from a carpentry machine and had penetrated his left preauricular region. In the following treatment at the emergency department, no foreign body was noticed and the $2$ cm wound was primarily sutured. Two days after this emergency intervention, the wounded area was swollen. The sutures were removed, followed by a preliminary diagnosis of parotid abscess, and therapy was continued with daily wound dressing. One week later a $1$ cm piece of wood extruded from the wound site of its own accord. A purulent discharge drained from the wound area for three months and the wound healed.

The swelling and pain in his left parotid gland recurred occasionally, but during the month prior to his latest admittance, these symptoms had worsened in spite of oral antibiotherapy. Physical examination revealed a $2 \times 3 \times 4$ cm firm, fixed parotid gland mass, tender to palpation. A $2$ cm skin scar was noticed secondary to the previously mentioned sustained trauma (Figure 1). Ultrasonographic investigation of the left parotid gland revealed a high degree of parenchymal heterogeneity and an $18 \times 5.7$ mm linear mass shadow (Figure 2a). Computerized tomography (CT) revealed a significant increase in the size of the left parotid gland in comparison to the right one. The parotid gland could not be clearly distinguished from the masseter muscle (Figure 2b).

The preoperative radiological data indicated that the foreign body was located in the parotid gland. The facial nerve identification with the superficial parotidectomy technique was to be conducted in order to prevent damage to the facial nerve structure during surgical procedures. A superficial parotidectomy was performed with the diagnosis of a foreign body within the left parotid gland.

The parotid gland was diffusely fibrotic. Following parotidectomy,
an approximately 1 × 2 cm fragment of wood that was buried in the masseter muscle and surrounded by granulation tissue was palpated and extracted (Figure 3).

Facial nerve functions were normal postoperatively, and the histopathological investigation of the excised parotid tissue was reported as “chronic sclerosing sialadenitis”.

Discussion

Foreign bodies within the parotid gland occur after penetrating trauma to either the oral cavity or relevant skin.2,5,6 Penetrating skin traumas, rather rare traumas, are usually mediated by foreign bodies such as bullets, pens or wooden fragments.1,3

Foreign bodies within the parotid gland are usually detected and removed in the early posttraumatic period. Factors affecting complications include the duration of implantation of the foreign body within the tissue, its relation to the facial nerve, the extraction technique, and the administered medical therapy.2 The foreign body may remain unnoticed within the parotid gland due to tissue edema after a serious penetrating trauma. As a result, clinical conditions such as chronic fistulas, sialocele, or tumour-like masses may appear.1,4 In this case, after palpation of the wounded area, the foreign body remained unnoticed and the wound was initially treated. Shortly thereafter, a fragment of the foreign body extruded via the fistula. Despite this condition, examination of the area was not thoroughly completed, and as a result, a residual piece of wood remained and caused an inflammatory reaction mimicking a parotid mass in the parotid gland.

One-third of foreign bodies secondary to trauma may remain undiagnosed.8 Only 15% of foreign bodies are visible on plain roentgenograms, while radiolucent foreign bodies, such as wood, are invisible. If superficial, wooden foreign bodies are more easily visualized by ultrasonography, while those imbedded deeper may be visualized via CT-imaging. Foreign bodies within fatty tissue may be detected by magnetic resonance imaging.8,9

The foreign body in this patient was detected by ultrasonography.
A foreign body in the parotid gland  

prior to surgery (Figure 2a), while the CT images revealed only diffuse fibrosis and no foreign body was visible (Figure 2b).

The preferred treatment modality for parotid foreign bodies is early surgical exploration, and immediate removal can minimize the risk for sialadenitis and fistula formation. Preservation of facial nerve during the surgical procedure is a critical priority for parotid foreign body removal. In delayed cases, superficial parotidectomy may be needed, and after parotidectomy, the neighbouring masseter muscle should be carefully palpated to verify the absence of any residual foreign bodies.

Conclusion

Residual foreign bodies may cause chronic inflammation in a parotid gland, creating a much more difficult environment for surgical therapy. In investigating for foreign body(s) imbedded in the parotid region, and particularly if there is suspected residual material, detailed radiological examination may provide an important guidance for treatment.

References


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