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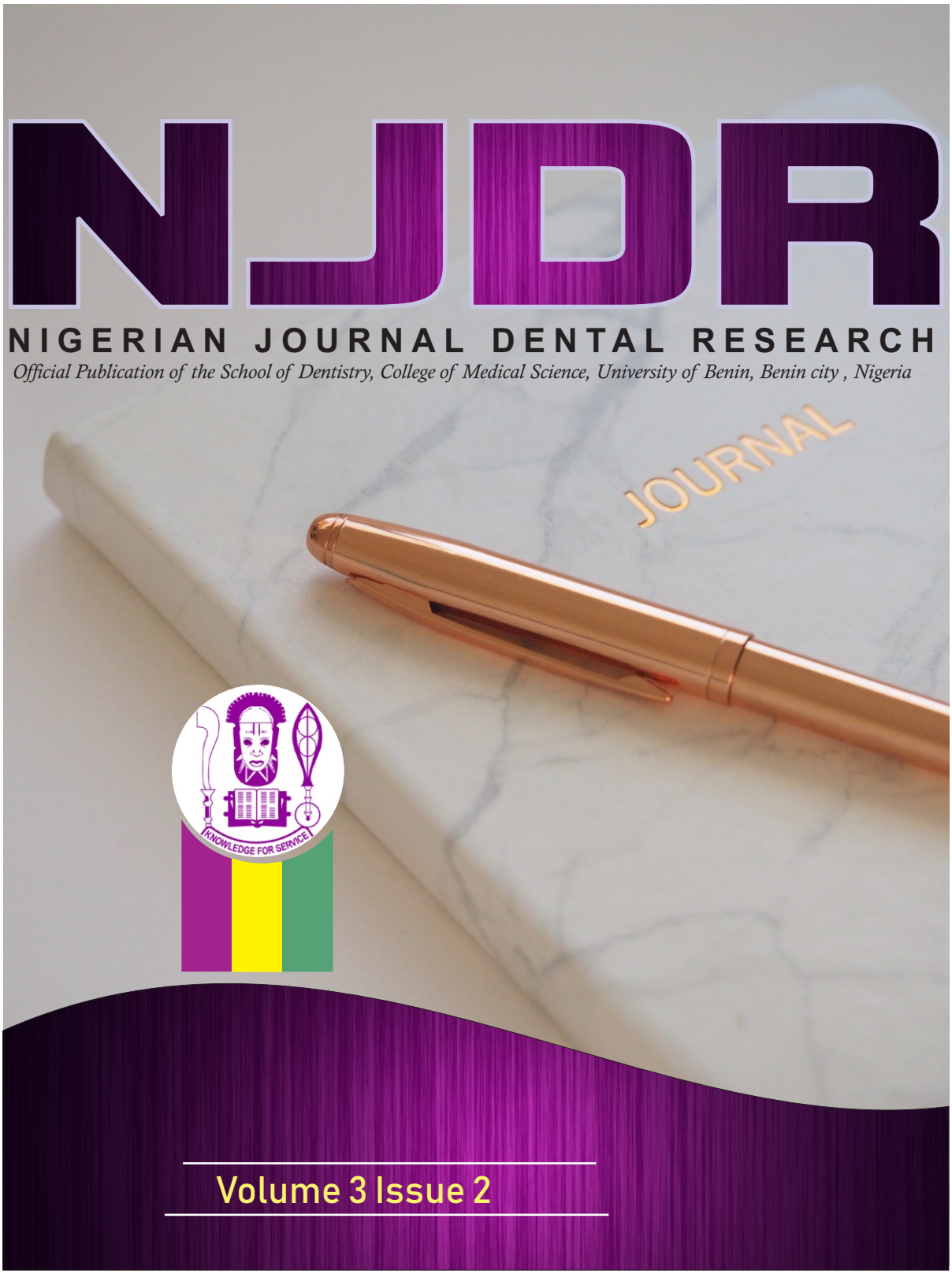

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Foreign Bodies in a Facial Wound: A Case Report and Review of Relevant Literature

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ABSTRACT

Objective: Retained foreign bodies in soft tissue wounds are common phenomena with an incidence of 38%; they are usually missed on initial evaluation. In the oro-facial region, retained foreign body within the masseter muscle is a relatively rare occurrence. The objective was to report a case of symptomatic retained foreign body within the masseter muscle

Case Description: Presented here is a case of a 24-year-old female who presented with left sided facial pain and difficulty in mouth opening following a history of facial trauma and treatment. The aetiology was fall in a flooded environment in an otherwise healthy individual. Treatment was said to be debridement and wound closure. Whereas the external wound healed satisfactorily, patient presented with two weeks later with pain and trismus. Investigation with plain radiographs revealed radiopaque foreign bodies. Following exploration, pieces of glasses of various sizes were recovered.

Conclusion: This case is serve as a reminder to practitioners of the importance of diligent exploration of skin and soft tissue wounds for possible foreign bodies. Secondly, the importance of immediate post trauma images to rule out embedded foreign bodies in tissues is brought to the fore.

Keywords: Foreign body, masseter muscles, trismus, pieces of glass

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INTRODUCTION

Retained foreign bodies in soft tissue wounds are common phenomena with an incidence of 38%; they are usually missed on initial evaluation.[1] Findings from previous study suggest that only 75% of soft tissue foreign bodies were presented within 48 hours, while patients with the remaining 25% presented weeks, months, and even years later.[2] Foreign bodies detected in wounds are most commonly composed of wood, glass, or metal[2]. Soft tissue foreign bodies most commonly occur secondary to penetrating or abrasive trauma, and they can result in patient discomfort, deformity, delayed wound healing, localized and systemic infections, and further trauma during attempts at removal.[3,4]

In the oro-facial region, retained foreign within the masseter muscle is a relatively rare occurrence, however certain cases have been previously reported and trismus is the usual presentation in such patients.[5,6] Therefore it is important that evaluation of skin and soft tissue wounds should include careful assessment for retained foreign bodies. A case of a 24-year-old female who presented with left sided facial pain and difficulty in mouth opening following a history of facial trauma and treatment is presented here.

CASE DESCRIPTION

A 24 years old female presented to the clinic with a painful left sided facial scar with associated trismus (Figures 1 and 2). Two weeks prior to presentation, she was said to have tripped and fell down with the left side of her face. The incident occurred by the roadside at Orisunbare area of Lagos state. It was said to be raining and she was waiting to board a vehicle at the bus-stop but she was also pressed and needed to urinate quickly before boarding. In a bid to hurriedly urinate at a nearby dump site she tripped and fell down on a broken television set with the left side of her face.

There was no history of alcohol consumption prior to the incident, she is not a known epileptic and there was no history of assault related to the incident. There was no loss of consciousness after the incident and she claimed she got up to her feet after the incident by herself.

She sustained laceration to the left side of her face, around the cheek with significant bleeding and was taken to a private hospital in Lagos where the wound was said to be explored, debrided and haemostasis achieved with immediate primary wound closure was done under local anaesthesia. She also claimed to have received tetanus toxoid in

the hospital at the time of treatment.

At presentation, there was a mild left sided facial swelling in the region of the masseter muscle with scarring of the overlying skin with associated tenderness over the swelling (Figure 1). There was limitation in mouth opening and inter-incisal distance was about 1.0cm (Figure 2). On radiological evaluation, a postero-anterior view of skull on a plain radiograph shows presence of radio-opaque objects related to the left side of the maxilla laterally (Figure 3).

An exploration of the wound in the left masseter was done under local anaesthesia using 2% lidocaine with 1:100,000 adrenaline infiltration. To ensure a good night rest, reduce anxiety and prepare patient for surgery, patient had a premedication of diazepam tablets 10mg, the night before and a repeat dose a few hours before the surgery. The surgical access was via the existing extra oral scar and 4 pieces of glass particles of varying sizes were retrieved in the process, from the body of the masseter following the exploration (Figure 4 and 5). Fibrous tissues were excised, blood clot evacuated and the exposed masseter muscle tissue was irrigated copiously with 0.9% normal saline solution and closure was done in layers using 3.0 vicryl sutures (Figure 6). Patient was placed on oral antibiotics, (Amoxil capsules, 500mg 8 hourly for five days, Metronidazole tablets 400 mg 8 hourly for five days) and analgesic (Paracetamol tablets 1g 8 hourly for three days), muscle relaxant diazepam tablets 5mg nocte for three days. She was discharged from the clinic that day into the care of her father who was adjudged a responsible adult and scheduled for a one week post-operative review appointment.

At one week postoperative review, there was improvement in mouth opening and inter incisal distance was 2.4 cm. Sutures were removed and patient was instructed to continue jaw exercise for another one week. At the 2nd post-operative review, inter incisal distance was 3.5cm, at the 4th post-operative week review, the inter-incisal distance was 3.8cm and at the 7th post-operative week review, the inter-incisal distance was 4.5cm (Figure 7).

DISCUSSION

Unintentional falls are the second most common cause of deaths from accidental injuries after motor vehicle collisions.[7] They were also the most common cause of injury seen in emergency departments in the United States.[8] Among young adults aged 18-35, falls are the third leading cause of accidental injury and the majority of the falls (58%) occurred while walking with the main cause of the fall being a slip (48%) or a trip (25%).[9] In tandem with findings above, the index patient was also within this age group and was said to have fallen due to a trip.

Notable risk factors associated with unintentional falls include excess alcohol use, intake of multiple medications, decline of physical, cognitive and affective capacities, and the presence of co-morbidity associated with chronic illnesses[10], however these were not implicated in the case presented. Notable previously reported environmental risk factors which are possibly implicated in this patient include slippery floor, cracked or uneven surfaces.[10] Also implicated here is a flooded arena which increased slippery nature of the ground as well as reduced visibility.

Emergency management of the patient at the hospital of first contact placed arrest of hemorrhage and primary wound closure, with little or no attempt at dedriment. This is similar to an account by Anderson *et al.*[1] where a foreign body was missed on initial evaluation and

Figure 1: Facial scar on presentation

therefore left in situ within the masseter muscle. The removal of glass here is similar to reports by Levine *et al.*[2] were foreign bodies made of glass particles were removed two weeks after the initial injury. Previous foreign bodies reported to have been impacted within the masseter muscle include wood fragments[5,6] and broken tooth brush.[11]

Contrary to previous reports[3,4] wound healing appears not to be delayed and there was no sign of

localized or systemic infection. This is possibly due to early primary closure of the contaminated wound, which was done within hours of injury and the ability of the patient's immunity to curtail the assault. However in agreement with these reports[3,4] there was significant discomfort. The discomfort was also associated with limitation in mouth opening and this was due to impaction of the foreign body within the masseter muscle. Previous cases of foreign bodies within the masseter muscle have also been reported to be associated with trismus.[5,6,11]

Diagnosis of the foreign body was aided with the use of a plain radiograph, precisely a postero-anterior view of skull radiograph and this is because the glass particles was radioopaque. Other imaging modalities that can be employed in diagnosing wooden foreign bodies which are not radioopaque include computerized tomographic scan, ultrasonography and magnetic resonance imaging.[5,6]

Exploration and removal of the foreign body was well tolerated under local anaesthesia combined with anxiolytic premedication. However, this practice was contrary to one of the previously reported cases where removal of foreign body in the masseter was done under general anaesthesia[11]. Similar to previous reports[5,6] there was resolution of trismus following removal of

Figure 3: Radiograph showing foreign bodies in the body of the masseter

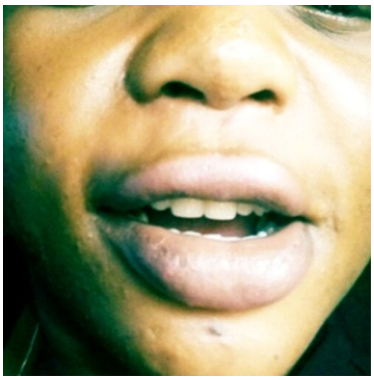

Figure 2: Limited mouth opening

Figure 4: Exploration of the wound via the scar

Figure 5: Extracted foreign bodies (glass pieces)

Figure 5: Immediate post - operative photograph

Figure 5: Post operative mouth opening at review

foreign body and mouth opening improved significantly.

CONCLUSION

Foreign bodies could be missed at initial evaluation following penetrating soft tissue trauma and trismus usually results if the foreign body is within the masseter muscle or any other muscle of mastication. It is therefore important that exploration of skin and soft tissue wounds be undertaken diligently for possible foreign bodies. Immediate post trauma images should be ordered to rule out embedded foreign bodies in tissues.

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