

Use of toothbrush in maxillofacial surgery

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Abstract

Thorough debridement is essential for the initial management of contaminated facial wounds to prevent permanent tattooing of facial scars and remove the need for secondary facial aesthetic surgery. We used a simple toothbrush for cleaning a contaminated wound with satisfactory results.

Facial wounds are almost always contaminated and more so if the etiology is road traffic accident. Good cleaning and debridement of a wound is essential for healing in an orderly fashion. Facial tissues have to be delicately handled as esthetics play an important role. We used a simple toothbrush for cleaning a contaminated wound with satisfactory results.

Key words: Toothbrush, Debridement of contaminated wounds

Case report

A 35 year old female patient was brought to the emergency department with history of road traffic accident. Her vitals were stable and she showed no signs of head injury. On local examination, she had extensive soft and hard tissue injury over the left frontozygomatic region. The force of trauma had caused stripping of soft tissue from the underlying bone. The soft tissue wound had ragged margins and was highly contaminated with road debris (Fig 1). There was no loss of tissue. There was a comminuted fracture of left zygomatic complex. Her vision was not impaired. She was taken up for repair under general anesthesia. A medium nylon bristled toothbrush was used to remove the embedded debris from the subcutaneous tissue and muscle (Fig 2). Thorough debridement was done using copious amounts of saline and povidone-iodine solution until the wound was clean (Fig 3). The zygomatic complex fracture was reduced and fixed. The ragged margins were finely trimmed, tissue approximated and sutured in layers. The sutures were removed on 7th post-operative day. The wound healed with no infection and minimal scarring.

Discussion

No wound can heal in an orderly fashion unless it is clean, healthy, and free of contamination. Thorough debridement is essential for the initial management of contaminated facial wounds to prevent permanent



Fig 1: Facial wound contaminated with dirt



Fig 2: Use of toothbrush for debridement

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Fig 3: After debridement

tattooing of facial scars and remove the need for secondary facial aesthetic surgery. Time spent in removing foreign bodies and dirt at this stage will be repaid one hundred fold in the months to come¹.

Although mechanical cleansing with saline-soaked sponges effectively removes bacteria, it damages the wound and impairs its resistance to infection². Mechanical abrasive scrubbing techniques and surgical excision can lead to blood loss and the loss of viable tissue. The conventional abrasive methods, e.g. plastic scrubbing brush, plastic pan scrub, or diathermy tip scratch pad, are sufficient for debridement of contaminated limb or torso wounds because of their flat skin surfaces³. Ultrasonic debridement is a viable option for the management of contaminated facial wounds^{3,4}.

Facial tissues, especially the subcutaneous tissues and muscles, require gentle handling due to their delicate nature. Aggressive scrubbing to remove dirt or dust with a stiff nylon brush can be used on the facial dermis. But this can damage an already frayed subcutaneous tissue and muscle. A toothbrush, however, provides a suitable alternative. It removes dirt from tissues without damaging them. The small flaps can be held in hand and scrubbed gently using a toothbrush with medium to hard bristles. A toothbrush can also be used in an emergency setting where sophisticated debridement equipment is not available. The other advantages of a toothbrush are it is readily available, can be sterilized and is cost effective.

Thus we recommend the use of toothbrush for cleaning any contaminated facial wound prior to suturing.

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