Case Presentation

A 68-year-old female presents to the ED with facial trauma. She tells you that she was walking in a parking lot trying to remember where she parked when she suddenly tripped over a curb and scraped her face on the asphalt. She remembers the event and did not lose consciousness. She denies any nausea/vomiting, headache, or blurry vision. She arrived at the ED by EMS who say that her GCS has remained 15. She tells you that she is a healthy individual other than her diabetes for which she takes Metformin and Ozempic. She does not smoke or drink alcohol. She tells you numerous times during your history that she is very worried about her lip injury and how it will look after it heals.

On exam, she is alert and oriented to person, place, and time. She has an abrasion over her nasal bridge and a laceration at the midline of her lower lip which is approximately 1.5cm deep extending all the way through the vermillion. Her upper right incisor is chipped. She is tender over her nasal bone. Her pupils are equal and reactive, and she has normal extra-ocular movements. She has normal facial sensation and strength and there is symmetrical rise of the uvula. There is no battle sign, hemotympanum, or periorbital bruising. You quickly test her sensation and strength is all her extremities which is normal.

Figure 1: Similar lip laceration as the patient in this case. (Benjamincousinsmd.com)
Associated Injuries

Before repairing a lip laceration, associated injuries must be considered. Common associated injuries include dental fractures, LeFort fractures, nasal bone fractures and jaw fractures.¹ Much less common, but can’t miss, associated injuries include intracranial bleed, basal skull fracture, or orbital floor fractures.

Impression/Plan

Given that she is older than 65 years old, you can’t rule out a head injury based of the Canadian CT Head Rule. However, given the mild mechanism of injury and the lack of signs/symptoms of intracranial pathology you decide to forego a CT head and turn your attention to the lip laceration.

Background

When repairing a lip laceration, extra vigilance is needed to ensure proper cosmetic appearance and to preserve the functionality of the lips. It is often one of first facial features people look at when talking to someone and therefore, minimal scarring and good aesthetic are often very important to patients presenting with these lacerations. The lips are also important in tactile sensation, phonation, and mastication.

Evaluation

Lip lacerations are almost always repaired with primary closure because of the difference in aesthetic outcome between primary and secondary closure. Secondary closure may be appropriate in patients with a delayed presentation, signs of infection (erythema, drainage of pus), or contamination in the wound.¹ Evaluation of the laceration includes location, length, depth, involvement of the vermillion border and presence of contamination or foreign bodies. Make sure to examine the internal and external lip as partial thickness without vermillion border involvement could be managed conservatively.
Anesthesia

Local anesthesia is often avoided in lip lacerations as it can cause swelling which will contort the laceration making it more difficult to maximize the cosmetic appearance. In young children, conscious sedation is needed as they will not stay still for the repair even if they are anesthetized. In adults, infraorbital nerve blocks are used for upper lips lacerations and mental nerve block are used for lower lip lacerations. These nerve blocks provide excellent anesthesia and the landmarking for these blocks are relatively simple. The supraorbital foramen, infraorbital foramen and mental foramen are lined up in a midsagittal plane (See figure 3). Another way to landmark the mental foramen is to find the midpoint between the alveolar crest of the second premolar and the inferior border of the mandible. When the mental foramen is located, inject 2-3cc of 1% lidocaine with epinephrine and bicarbonate approximately
1cm under the skin towards the mental nerve. If your laceration is at the midline, then bilateral mental nerve blocks will be needed. Next, wait 15-20 minutes to allow for the anesthetic to take full effect before starting the repair.

Figure 3: Anatomical location of the supraorbital foramen, infraorbital foramen, and mental foramen. (Can J Anesth/J Can Anesth 56, 704–706 (2009).)

Laceration Repair

Once the laceration is fully anesthetized, you can irrigate the wound and thoroughly examine the laceration. You need to rule out any foreign bodies in the lip through palpation as teeth fragments may not be initially visualized. If in doubt, a lateral XRay may rule out any teeth fragments in the lips as they are radiopaque. You may need to get an extra set of hands to help evert the lip when closing the inner lip portion of the laceration. The most important suture in this repair is the suture at the vermilion border as lining up the vermilion border perfectly will yield the best cosmetic result. Some clinicians prefer to close the inner and outer fibrofatty junction before the vermilion border, whereas some will put their first suture at the vermilion border before closing the deeper tissues. After these steps, you simply need to bring the rest of the lacerations back together. Most clinicians will use either 4-0 or 5-0 absorbable...
Review of Lip Laceration Repair

sutures for their deep sutures then 5-0 or 6-0 absorbable sutures for the superficial sutures depending on the anticipated tension on the wound when closed.

Aftercare

The main considerations for aftercare of wounds are tetanus, prophylactic antibiotics, and follow-up.

- A tetanus booster should be given to patients who are unsure as to when their last dose was or if it has been greater than 5 years since their last Tdap.
- The evidence of prophylactic antibiotic treatment for lip lacerations is lacking. One study by Steele et al showed that there may be a benefit to prophylactic antibiotics in full thickness lip lacerations such as our case, but their results were not statistically significant.\(^5\) The face in general is such a highly vascularized area that if the patient is healthy and not taking any immunosuppressants medications, then the risk of infection is low, and antibiotics are not needed. Irrigation with salt water 2-3x/day is sufficient.
- Lastly, simple lip lacerations that were repaired in the ED with satisfactory results don’t need Plastics follow-up. If the lip is quite disfigured and you are worried about the cosmetic results, then these patients should be seen by Plastics either in the ED or within 24 hours. Follow-up after several days or more should be avoided as the laceration will already be in the healing stage. This would make any revision and/or alteration to cosmetic results difficult.

References