



Visual Case Discussion

Industrial wire penetration to the infraorbital area

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A 33-year-old female presented with an approximately three-foot-long industrial-size wire impaled in her right infraorbital face (Fig. 1). Her husband was mowing the grass when the mower blade struck the wire and launched it across the yard into her face. The patient's left hand stabilized the protruding wire. She was hemodynamically stable but in severe pain. She was given fentanyl, Tdap, and cefazolin. Prior to imaging, the wire was trimmed with bolt cutters. CT face revealed an acute comminuted fracture of the anterior wall of the right maxillary sinus (Fig. 2). The wire was removed in the ED. The wound was irrigated thoroughly and packed with iodoform gauze. The patient was discharged on amoxicillin-clavulanate with Plastic Surgery follow-up.

Questions 1

A patient is being treated in the emergency room for a puncture wound just below her right eye. She is in pain and asks if there is anything that can be done to relieve the stinging across her right face. If an infraorbital nerve block were to be performed, which of the following areas would retain normal sensation?

- Upper lip
- Lateral nose
- Lower eyelid
- Lateral cheek

Correct Answer = d

Infraorbital nerve blocks provide pain relief to the upper lip, lateral nose, lower eyelid, and medial cheek.

Hollander JE and Camacho M. *Assessment and management of facial lacerations*. UpToDate, 2019. Retrieved July 17, 2019, from <https://www.uptodate.com/contents/assessment-and-management-of-facial-lacerations>.

Question 2

A 55-year-old male steps on a rusty nail. He is unsure when his last tetanus vaccination was. Which of the following would be the most appropriate action?

- Give Tdap and tetanus immunoglobulin now.
- Give Tdap only.
- Wait until confirming vaccination status. If less than 2 doses, give Tdap and tetanus immunoglobulin.
- Wait until confirming vaccination status. If less than 3 doses, give Tdap only.



Fig. 1. Patient with industrial wire through infraorbital area.

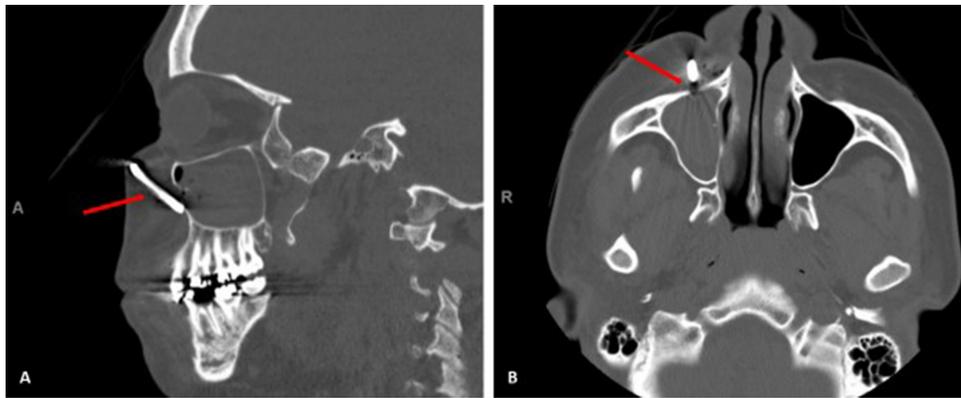


Fig. 2. AP (A) and transverse (B) CT views revealing comminuted fracture of anterior wall of the right maxillary sinus.

Correct Answer = a

In the case of a patient 10-years-of-age or older, who is unaware of tetanus vaccination status, Tdap and tetanus immunoglobulin should be given promptly. If a patient has had three or more doses of Tdap, a booster should be given only if the last booster was given over 10 years prior. In this case, tetanus immunoglobulin would not be necessary. If the patient had less than three doses, Tdap should be given. Immunoglobulin would also be indicated if the wound is not clean.

Liang JL, Tiwari T, Moro P, et al. *Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP)*. MMWR Recomm Rep 2018; 67:1.

Wound management and tetanus prophylaxis. UpToDate. Retrieved July 17, 2019.

Question 3

A 10-year-old boy presents to the emergency room after sustaining a puncture wound to the right infraorbital area with a marshmallow skewer at a bonfire. Respiratory rate is 22, blood pressure is 110/80, temperature is 99F, and O2 saturation is 97%. He is crying but is

nondistressed. The left pupil is 3mm and round. The right pupil is 4mm and shaped like a teardrop. Seidel sign is negative on the left and positive on the right. What is the best next step?

- Give ibuprofen and follow-up in one week.
- Place an eye shield over the right eye and consult ophthalmology.
- Start 4.5g IV piperacillin-tazobactam.
- Start 4mg/kg IV ketamine.

Correct Answer = b

Seidel sign is used to assess for anterior chamber injury. A positive sign in conjunction with a teardrop-shaped pupil and a history of trauma to the periorbital area is indicative of globe rupture. Immediate protection should be used to prevent further injury to eye and ophthalmology should be consulted for further surgical evaluation.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.visj.2019.100652](https://doi.org/10.1016/j.visj.2019.100652).