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0196-0644/\$-see front matter
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Figure 1. Patient showing chipped teeth.



Figure 2. Right central incisor with a small drop of blood. Used with permission of Andrew D. Louie, MD, MPH, Department of Emergency Medicine, Feinberg School of Medicine, Northwestern University, Chicago, IL.

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A 36-year-old woman presented to the emergency department after tripping on the sidewalk and falling forward, striking the front of her face. She denied any loss of consciousness and only complained of upper lip pain and front tooth pain.

On physical examination, the patient had an abrasion over the right upper lip that was not actively bleeding. Her right central incisor, tooth 8, was chipped and revealed a small amount of blood at the fracture site. In addition, she had significant tenderness on percussion with a tongue depressor. Her left central incisor, tooth 9, was partially chipped and was not painful on percussion. Neither tooth was mobile, and her gingiva did not show any signs of laceration, ecchymosis, or foreign bodies.

*For the diagnosis and teaching points, see page e2.
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DIAGNOSIS:

Ellis III and I tooth fractures. Ellis III fracture of right central incisor and Ellis I fracture of left central incisor (Figure 1) were present. Each tooth is divided into 3 layers, the enamel, dentin, and pulp.¹ The 3 types of Ellis fractures correspond to the 3 layers of the tooth that are exposed. The photograph (Figure 2) reveals a small drop of blood, indicating that the neurovascular bundle has been compromised and is therefore classified as an Ellis III fracture.

Ellis I fractures are usually managed with pain control and referral to a dentist for cosmetic repair. Both Ellis II and III fractures are covered with calcium hydroxide paste, and the patient is given prompt dental referral, with Ellis III fractures sometimes needing a pulpectomy.² Complications of tooth fractures include infection, cosmetic deformity, pulpal necrosis, and tooth loss. Our patient's exposed dentin and pulp was covered with calcium hydroxide paste (Dycal, Dentsply International Inc., Milford, DE) and wrapped with dental foil, and she was discharged with pain medications and given an evaluation by a dentist later that afternoon.

REFERENCES

1. Beaudreau RW. Oral and dental emergencies. In: Tintinalli JE, ed. *Emergency Medicine: A Comprehensive Study Guide*. 6th ed. New York, NY: McGraw-Hill; 2004:1482-1494.
2. Peng L. Dental: fractured tooth [eMedicine Web site]. Available at: <http://www.emedicine.com>. Accessed September 14, 2006.