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## Otterbein University Women's Lacrosse Tooth Fracture

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## ***Otterbein University Women's Lacrosse Tooth Fracture***

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Health and Sports Sciences; Otterbein University

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### ***BACKGROUND***

Sports are a significant source of facial injury. According to published data, 3%-29% of facial injuries occur during sports. As for dental injuries, these injuries are more common than expected.<sup>1</sup> Education of the treatment for dental injuries is significant, especially when a luxation of the tooth occurs.

### ***PURPOSE***

This study is a clinical case study of a tooth injury, specifically in a women's lacrosse player.

### ***HISTORY***

There was no medical history of facial injuries or tooth injuries. The athlete was playing during a competition when she went down for a ground ball, collided with another Otterbein lacrosse player and the opposing team player. The opponent's stick hit her face horizontally. Upon evaluation, the athlete presented with a visible loss of dentin and enamel. The dentin forms the majority of the tooth giving it the yellowish or white-cream appearance. The enamel covers the crown of the tooth and protects the tooth from damage. No pulp is exposed (no red dot in the tooth). There was no temperature sensitivity, no excessive mobility, and was not tender to palpate.

### ***DIFFERENTIAL DIAGNOSIS***

The differential diagnoses for this injury included: tooth concussion, tooth subluxation, tooth intrusion luxation, tooth extrusion luxation, tooth avulsion, jaw fracture and tooth fracture. Tooth concussion is an injury to the tooth-supporting structures but as no increased mobility or displacement, but is tender to touch. Tooth subluxation is a tooth

that has increased mobility but is not displaced and bleeding from the gingival can be seen. Tooth intrusion and extrusion luxation is when the tooth either enters the alveolar bone or is partially displaced out of its socket. Tooth avulsion can be characterized when the tooth is completely out of its socket. A tooth fracture is a fracture that is confined to the enamel with the loss of tooth structure.<sup>2</sup>

### ***TREATMENT***

The treatment options for the differential diagnoses depend on whether there needs to be immediate treatment of the injured tooth or immediate referral to a dentist or an orthodontist. For a crown-root fracture without pulp involvement, there is no immediate treatment that is needed but the dental referral should be within 48 hours of the injury. A crown-root fracture with pulp involvement needs no immediate treatment needed but make sure to not put any medication on the exposed pulp. A dental referral should have as soon as possible but can wait until the following morning. For a root fracture, there is no immediate treatment needed but the dental referral should happen as soon as possible. For a tooth concussion/subluxation, there is no immediate treatment needed and the dental referral can occur within 48 hours for evaluation only. As for the tooth avulsion, the immediate treatment is to put the tooth back in the socket, if that is not possible put in milk or saline, and a dental referral is needed immediately.

### **UNIQUENESS**

The uniqueness of this clinical case study is that the athlete suffered a second injury on top of the tooth fracture. She suffered from a torn ACL. The torn ACL took precedent over the tooth, but knowing specific red flags in dental injuries could have changed the outcome of the situation.

### **CONCLUSION**

In conclusion, the importance of knowing when to refer an athlete with a dental injury can help save the viability of the injured tooth and ligaments.

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**KEY WORDS:** pulp, dentin, enamel, root, tooth concussion, tooth subluxation, tooth intrusion luxation, tooth extrusion luxation, tooth avulsion, jaw fracture, tooth fracture