Pterygoid Plate Fractures Associated with Mandible Fractures
Anh Q. Truong, M.D.\(^a\), E. Bradley Strong, M.D.\(^a\), Arthur Dublin, M.D.\(^b\)

Department of Otolaryngology Head and Neck Surgery and Radiology\(^b\),
University of California – Davis Medical Center, Sacramento, CA, U.S.A.

INTRODUCTION
Classically, pterygoid plate fractures noted on computed tomography (CT) images are a component of midface fractures\(^1\)–\(^3\). Pterygoid plate fractures noted on CT without associated Le Fort fractures may present a confusing clinical picture. Currently, there are no descriptions of isolated lateral pterygoid plate fractures (i.e. without an associated medial pterygoid plate fracture or a Le Fort fracture) associated with mandible fractures. This retrospective case series will review the relevant anatomy and propose a mechanism of isolate pterygoid plate fractures associated with mandible fractures.

OBJECTIVES
1. To evaluate CT scans with evidence of isolate lateral pterygoid plate fractures with concomitant mandible fractures.
2. To propose a mechanism of lateral pterygoid plate fractures associated with mandible fractures

MATERIALS & METHOD
After IRB approval was obtained, the electronic medical records of a series of seven patients with pterygoid plate fractures treated at UC Davis Medical Center between 2006 to and 2012. Demographic information was extracted. Available CT images were evaluated by the lead author for all facial fractures.

RESULTS
Seven patients between 2006 and 2012 with facial trauma had lateral pterygoid plate fractures without Le Fort fractures. Subsequent maxillofacial CT scans demonstrated associated mandible fractures. All the patients were male with an average age of 37 years. All seven patients had an ipsilateral subcondylar fracture, two had sphymseal fractures, one had a body fracture, one had a parasymphseal, and one had a coronoid fracture (Table 1).

DISCUSSIONS/FUTURE WORK
- An isolated lateral pterygoid plate fracture suggests the presence of a mandible fracture.
- CT features of isolate pterygoid fracture:
  - Unilateral + no involvement of medial plate
  - Vertical fracture of lateral pterygoid plate
- Proposed mechanism:
  - Force transduction through the pterygoid muscles during acute displacing force on the mandible
  - Pterygoid muscles contraction during acute injury
- A dedicated CT of the mandible may reveal mandible fractures with findings of an isolated lateral pterygoid fracture
- A more extensive retrospective chart review of all facial fractures will be performed to strengthen the association between the fractures

REFERENCES

DISCLOSURE/ACKNOWLEDGEMENTS
All electronic medical records and CT images were viewed with UC Davis Medical Center equipments.