

## Orbital Foreign Bodies: What We Can See...

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### Summary:

Blunt and penetrating trauma to the orbit is a common cause of emergency ophthalmologic evaluation, imaging and treatment. These patients will often present with pain, discomfort, bleeding or visual loss. Frequently physical evaluation for extent of injury is challenging. Emergency imaging is leveraged to diagnose extent and pattern of orbital injury. Precise anatomic delineation of the imaging pattern of orbital injury includes careful scrutiny for orbital foreign bodies. Orbital foreign bodies may lead to globe rupture, vision loss, infection and retinal toxicity. Imaging plays a critical role in injury assessment and development of effective treatment plan.

### Purpose:

The purpose of this educational exhibit is to review the clinical and radiologic anatomy of blunt and penetrating orbital injuries with a focus on identification of orbital foreign bodies which may determine the need for surgical treatment. The foreign body composition may include wood, glass, metal, bone fragments among other more unusual materials.

### Materials and Methods:

Retrospective clinical and teaching cases are utilized to demonstrate anatomic patterns of injury as well as subtle and unmistakable orbital foreign bodies. Characterization of the type of foreign body through the use of clinical images, plain films, CT and MRI is demonstrated through real world examples. Imaging features to differentiate various materials will be highlighted.

### Results and Conclusions:

Multiple case examples of blunt and penetrating orbital trauma are presented each containing a foreign body. Wood, glass, metal, including BBs and bullets and unusual penetrating objects such as pens and pencils, fish hooks and lawn darts have been reported. While some inert materials may be safely left in place without consequence, others may present an ongoing risk of infection or toxicity to orbital structures. Meticulous imaging can assist the ophthalmologist in the assessment of the extent of orbital injury and to determine optimal management for preservation of function.

Educational objectives:

- Overview the anatomy of the orbit in the setting of trauma
- Discuss the predominant forms of foreign bodies to the orbit
- Discuss how to distinguish between different forms of foreign bodies to the orbit via imaging
- Review the risks of intraorbital foreign bodies including globe rupture, infection and visual loss
- Discuss the different treatment plans for foreign bodies to the orbit