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EMERGENT NEEDLE ASPIRATION OF AN ORBITAL SUBPERIOSTEAL HEMATOMA

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☐ **Abstract—Background: Delayed presentation of orbital trauma as an acute subperiosteal hematoma. Case report: A 12-year-boy developed sudden painful abaxial proptosis of the left eyeball 15 days after blunt trauma over the forehead. On contrast-enhanced computed tomography, a heterogeneous, hypodense, non-enhancing mass with biconvex contour was seen adjacent to the orbital roof. Direct needle drainage was performed and about 10 mL dark blood was aspirated. Proptosis reduced immediately and resolved completely at 2 weeks follow-up. Why Should an Emergency Physician Be Aware of This?: Sudden proptosis with no immediate history of trauma can be alarming for the emergency physician. Familiarity with this clinical entity and early drainage can decrease morbidity.** © **2016 Elsevier Inc. All rights reserved.**

☐ **Keywords—orbital; subperiosteal; hematoma; aspiration; trauma**

INTRODUCTION

Delayed presentation after an uneventful or forgotten trauma is not unusual for orbital subperiopsteal hematoma (1). Decision to observe or intervene depends on clinical severity and acuteness of presentation (2). Provided the integrity of the bony orbit is intact, needle aspiration has been accepted as a simple, rapid, and effective emergency technique (1). Though there can be slight variations in the technique, we believe that it has been performed ideally in the video demonstration.

CASE REPORT AND DRAINAGE TECHNIQUE

A 12-year-boy was referred to our facility with sudden painful abaxial proptosis of the left globe of 1 day duration. He had experienced blunt trauma to the left forehead with a cricket ball 15 days earlier. The incidence was uneventful at the time of its occurrence. At presentation, his uncorrected visual acuity (UCVA) in the fellow eye was 6/6, while in the affected eye it was 6/18, which improved to 6/6 with pinhole. Pupillary reactions and intraocular pressures (right, 16 mm Hg; left, 20 mm Hg) were normal. There was proptosis of about 10 mm with inferior globe dystopia of about 15 mm (Figure 1A, B). There was limitation of extraocular movements, more for up-gaze, while retropulsion of the globe was positive. Fullness of the upper lid with mild bluish discoloration of the overlying skin was also noted. A firm, non-compressible, non-reducible, round mass was palpable through the upper lid in continuation with the smooth orbital margin. No pulsation, bruit, or variation in size (viz. postural or valsalva associated) was noticed. Indirect ophthalmoscope revealed few choroidal folds in the superior quadrant, while the rest of the ocular examination was

Informed consent for publishing clinical photographs was obtained from legal guardian of the patient.

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Figure 1. (A) Inferior globe dystopia with fullness of upper lid and (B) proptosis of the left globe at the time of presentation; (C–D) mild residual globe dystopia immediately after needle aspiration; and (E–F) normal appearance at 2 weeks follow-up.

normal. Systemic workup, including routine coagulation profile was within normal limits.

On ultrasonography, a large retrobulbar mass with moderate sound attenuation was detected in superior orbit (Figure 2A). The mass was limited superiorly by the bone spike of the roof, while its posterior border was not defined. Contrast-enhanced computed tomography was done a day before in another hospital. Though the film quality was poor, it revealed a heterogeneous, hypodense, non-enhancing mass with biconvex contour adjacent to the orbital roof sparing the apex (Figure 2B, C). No bony changes were seen. Under general anesthesia, a 23-G needle on 10-mL syringe was inserted through the upper lid into the most accessible part of the mass (Supplementary Video 1). With a "give-way" feel, the needle entered the mass as if into a cavity. On pulling the plunger, 10 mL dark blood was aspirated with instant remarkable decrease in proptosis. Gentle momentary tamponade with hands was applied over the closed lids. After recovery from anesthesia, a residual proptosis and hypoglobus of about 3 mm each was documented (Figure 1C, D). The UCVA of the left eye was improved to 6/6. At 2 weeks follow-up, the boy was absolutely normal (Figure 1E, F).

DISCUSSION

The subperiosteal space is the outer most potential space of the orbit limited by firm adhesions of the periosteum at suture lines and orbital margin. Shearing force (e.g., blunt trauma) or direct puncture (e.g., penetrating trauma or iatrogenic) tears the bridging vessels in the subperiosteal