

Spontaneous globe luxation associated with chronic obstructive pulmonary disease

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Spontaneous globe luxation is a rarely reported condition which can lead to complications like optic neuropathy. Common causes are thyroid eye disease, shallow orbit and floppy eyelid syndrome. We report a case of spontaneous globe luxation with the onset and severity associated with chronic obstructive pulmonary disease (COPD). To our knowledge, this is the first case of spontaneous globe luxation associated with COPD.

Key words: Chronic obstructive pulmonary disease, globe luxation, spontaneous

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Globe luxation occurs when the globe is displaced anteriorly beyond the orbital rim with retraction of the eyelids behind the globe and tethering of the optic nerve.^[1] The resultant acutely occurring extreme proptosis can cause severe anxiety, pain, corneal exposure, retinal venous congestion and optic neuropathy.^[2] Globe luxation can be spontaneous, traumatic or voluntary. We report a case of spontaneous globe luxation associated with chronic obstructive pulmonary disease (COPD). To our knowledge this is the first case report of such an association.

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Case Report

A 46-year-old male had been admitted in the intensive care unit (ICU) for severe chronic obstructive pulmonary disease (COPD; bronchial asthma). Patient developed acute proptosis of both eyes after admission. Based on the clinical picture of acute bilateral proptosis with retracted lids [Fig. 1] and patient's history of similar episode in the past, a diagnosis of globe luxation was made and the globe was reduced by pressing on the superior sclera down and back while pinching the upper lid [Figs. 2 and 3]. History from the patient and his wife revealed that he had previous such episodes over past 4–5 years. The episodes initiated after he started developing wheezing episodes and most of the globe luxation episodes occurred along with exacerbations of COPD. Ocular examination revealed bilateral pseudophakia with normal pupil and fundus. Axial length in both eyes was 23.8 mm. Computed tomography (CT) scan of orbit revealed no orbital mass [Fig. 4]. CT scan showed a proptosed eye with a stretched optic nerve because patient developed luxation while CT was being performed. Orbit volume and globe volume appeared normal.

During his stay in ICU, the patient had repeated episodes of globe luxation (almost every 2 hours) which was reduced each time. Bilateral temporary tarsorrhaphy was done after five to six episodes of repeated globe luxation to prevent the repeated proptosis. Unfortunately, the patient developed complications such as respiratory paralysis and septicemia and expired on the third day of admission.

Discussion

Spontaneous globe luxation is a rare event. Kunesh *et al.* reviewed and found 26 reported cases of spontaneous globe luxation till 2001.^[3] After that, another four case reports regarding spontaneous globe luxation could be identified in literature review till 2010. Spontaneous globe luxation occurs in patients with thyroid eye disease,^[1] proptosis, floppy eyelid syndrome and shallow orbit.^[4] Rare causes like histiocytosis X^[5] and Engelmann's disease^[6] have also been reported. Luxation can be precipitated by lid manipulation, Valsalva maneuver, trauma, general anesthesia^[2] and even by contact lens insertion.^[3] Structural anomalies resulting in laxity of orbital ligaments and extraocular muscles can predispose to globe luxation. Once the luxation starts, the orbicularis muscle goes into spasm to maintain the state of luxation.

The case reported here had a history of globe luxation whose onset correlated with increased severity of COPD. He also had recurrent luxation after admission for severe COPD. The raised intrathoracic pressure with resultant increased intraorbital pressure must have caused the luxation. Preexistent weaknesses of extraocular muscles and ligaments could have predisposed the patient for globe luxation. Floppy eyelid was

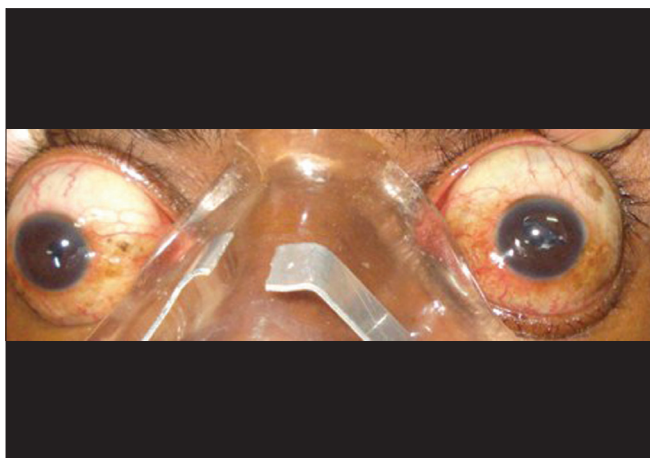


Figure 1: Prominent luxation of both globes



Figure 2: Left globe has been reduced. Right eye still luxated



Figure 3: Both globes have been reduced



Figure 4: CT scan showing bilateral prominent globe luxation with stretched optic nerve

not demonstrated in this patient. CT scan ruled out a shallow orbit or orbital mass as cause. Review of literature did not reveal any such case of luxation being precipitated and aggravated by COPD.

Management consists of simple reducing maneuvers like asking the patient to look down, pinching the upper lid and pressing on the superior sclera down and back.^[1] This simple technique can be taught to the patient also and can help to avoid severe anxiety when the patient develops such an episode where help may not be available.

Surgical treatment consists of lateral tarsorrhaphy, pentagonal wedge eyelid resection and advancement of orbital wall.^[4] But lateral tarsorrhaphy has also been reported to increase the risk of luxation by producing a tighter orbit and increased intraorbital pressure, and once luxation occurs, the smaller remaining palpebral aperture can hinder the reduction

of the globe.^[5]

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