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CASE REPORT

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Bilateral Linear Subconjunctival Hemorrhage in a Trauma Patient

Subconjunctival hemorrhage may be associated with many forms of trauma including Valsalva's maneuvers induced by heavy lifting, straining at stool, vomiting, and coughing. It may also occur from innocuous minor trauma associated with merely rubbing the eye, or it may be associated with sudden venous congestion of the head. The accumulation of blood beneath the conjunctiva may also occur secondary to blunt trauma or blast injury [*1-3*]. This case report represents an incident of an extremely unusual manifestation of subconjunctival hemorrhage associated with a gunshot wound to the chest.

Case Report

A previously healthy 26-year-old white male sustained a single gunshot wound to the chest after evading arrest by military police. He was dead on arrival at the emergency room. An autopsy was performed 6 h after death; an oblique entrance wound 3 cm in diameter was present 3 cm from the left of the midline and 3 cm below the clavicle in the anterior chest wall. The wound track was from left to right, minimally superior to inferior, entering the third intercostal space. The missile then entered the anterior mediastinum and caused a hemicircumferential laceration of the ascending aorta which was associated with hemopericardium of 500 cm^3 (Figs. 1 and 2). The missile, an 11.4-mm (0.45-caliber) full-jacketed bullet, continued into the right lung and entered the right lateral chest wall where it came to rest in the soft tissue slightly posterior and slightly inferior to the posterior axillary line, 3 cm below the axilla. The significant finding unassociated with the gunshot wound was that of bilateral horizontal, linear, subconjunctival hemorrhages just below the midline of the irises. They extended from the limbuses in a linear and horizontal position medially and laterally as far as could be seen externally. There was no evidence of blunt trauma to the head, eyes, nose, or face (Fig. 3). Examination of the skull and brain were unremarkable.

Discussion

The unusual manifestation of bilateral, linear, horizontal subconjunctival hemorrhage

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FIG. 1—*Laceration of aorta with resultant hemopericardium.*

FIG. 2—*Partially clotted blood filling the pericardial sac with resultant cardiac tamponade.*

FIG. 3—*Bilateral, linear, horizontal subconjunctival hemorrhages.*

may be explained on the basis of the autopsy findings without postulating direct trauma to the eyes, head, or face. Two forces in this case may have been enough to rupture the small subconjunctival capillaries: the impact of the missile initially at the wound of entrance and the compression force of the missile as it lacerated the aorta. Because of the associated hemopericardium with resultant cardiac tamponade, cardiac output must have

ceased in an extremely short time, thus preventing the seepage of blood from the torn subconjunctival capillaries.

In a review of the literature, we were unable to document linear subconjunctival hemorrhages from any traumatic cause.

Summary

A case of bilateral linear subconjunctival hemorrhage secondary to a gunshot wound to the chest has been presented. The linear character was explained by cardiac tamponade and nearly instantaneous cessation of cardiac output.

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