

## Red eyes after a gang-fight

A previously healthy 26-year-old man presented to the accident and emergency department with injuries 3 hours after being involved in a gang-fight. Physical examination showed a diffuse, purplish, petechial rash on the face with bilateral diffuse subconjunctival haemorrhages and ecchymoses on the eyelids (Fig). The pupils were equal and reactive. His intra-ocular pressures and dilated fundal examinations were normal. His visual acuity was 20/20 bilaterally. The patient gave a history of unconsciousness of unknown duration after the injury. He did not complain of any facial or neck pain. His breathing was normal and his vital signs were stable. No external injury to the scalp was noted. Examination of the rest of the body revealed no abnormalities. What is the diagnosis?

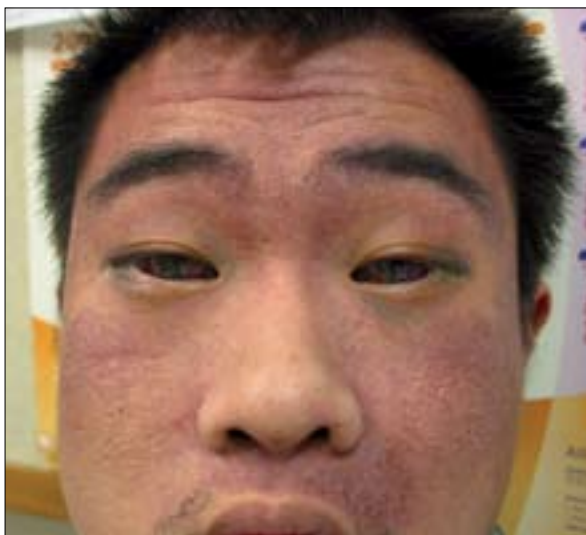
The ocular signs were consistent with a strangulation injury. Further history taking revealed that the patient had been placed in an 'arm chokehold' position and strangled for a couple of minutes during the gang-fight.

In patients with a history of head injury and physical findings of bilateral eyelid ecchymoses and bilateral

subconjunctival haemorrhages without identifiable posterior limits, it is important to include an anterior skull base fracture as a differential diagnosis, especially if rhinorrhoea of cerebrospinal fluid is present. However, the facial petechial rash will be absent in such cases.

Few reports in the literature describe victims who have survived strangulation. The majority of these reports have been published in forensic journals. The ocular features seen in strangulation injury are the result of increased venous pressure with or without an associated increase in intracranial pressure. The most common ocular manifestations of such injuries are bilateral subconjunctival haemorrhages and ecchymoses of the eyelids.<sup>1-3</sup> Retinopathy caused by strangulation is less common and can range from mild retinal oedema to diffuse retinal haemorrhage as seen in Terson's syndrome.<sup>3,4</sup> In severe cases, vitreous haemorrhage may result as well.<sup>5</sup> Rarely, haemorrhage into the extra-ocular muscles may lead to impaired ocular motility.<sup>6</sup> An unusual case of Horner's syndrome secondary to carotid dissection after strangulation has also been reported.<sup>7</sup>

A wide spectrum of injury in the head and neck region may be seen after strangulation.<sup>8</sup> A diffuse petechial rash above the strangulation site is the result of capillary leakage due to the increase in venous pressure. Abrasions, ecchymoses, and a compression groove may be seen on the victim's neck. A fracture of the laryngeal cartilage may present with hoarseness, stridor, and delayed airway obstruction. Reflex cardiac dysrhythmia is possible due to carotid sinus stimulation and increased vagal tone. Prolonged venous congestion can produce cerebral oedema and increased intracranial pressure. Compression on the carotid arteries and jugular veins may result in cerebral asphyxia, leading to unconsciousness and death.



**FIG.** A 26-year-old man with a diffuse purplish petechial rash on the face, bilateral diffuse subconjunctival haemorrhages and ecchymoses on the eyelids

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## Answers to CME Programme

### *Hong Kong Medical Journal* December 2006 issue

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#### **I. Surgical treatment of penile curvature**

A	1. False	2. False	3. False	4. True	5. True
B	1. False	2. True	3. False	4. False	5. False

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#### **II. Occupational tuberculosis: a review of the literature and the local situation**

A	1. False	2. False	3. True	4. True	5. False
B	1. True	2. True	3. False	4. False	5. False
C	1. True	2. True	3. False	4. True	5. False