CLINICAL SNAPSHOT

Pneumomediastinum in a Child Following Blunt Thoracic Trauma

An 11-year-old boy fell from a height of 2 m during parkour training, striking his thorax upon a concrete wall. On admission to hospital he had thoracic pain, a subjective impression of slight breathing difficulty with a normal pattern of respiration, eupnea, bilateral vesicular breathing sounds, pre-existing funnel chest, and left cervical soft-tissue emphysema. There was no hemoptysis.

Radiography showed pneumomediastinum (linear hypertransparencies; white arrows), cervical soft-tissue emphysema (asterisks), and a nondislocated fracture of the left first rib (black arrow).

Focused assessment with sonography for trauma (FAST) of the abdomen, pericardium, and lungs showed no abnormalities, and blood tests, including cardiac enzymes, also came back normal. The patient was discharged in excellent general condition after 2 days.

In this case the most likely cause of the pneumomediastinum is alveolar rupture with extrapleural air dissection into the mediastinum (Macklin effect). Exchange of blood gases was not affected, and antibiotic treatment was not required. The diagnosis was strongly indicated by the classic (cervical) soft-tissue emphysema with only mild clinical symptoms. Pneumomediastinum can also occur in asthma, chronic obstructive pulmonary disease, after consumption of cocaine, or in newborns following spontaneous delivery. Overdiagnosis and overtreatment should be avoided. Bronchial rupture is a possible differential diagnosis but rarely occurs in children due to the elasticity of the thorax. It usually occurs as a component of multiple trauma in serious accidents or falls from a great height.

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Thoracic radiograph showing pneumomediastinum (white arrows), a fracture of the left first rib (black arrow), and soft-tissue emphysema of the neck (asterisks)