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Airway obstruction Early intubation is very important, particularly in cases of neck haematoma or possible airway oedema. Airway distortion can be insidious and progressive and can make delayed intubation more di ffi cult if not impossible. Tension pneumothorax A tension pneumothorax develops when a ‘one-way valve’ air leak occurs either from the lung or through the chest wall. Air is sucked into the thoracic cavity without any means of escape, completely collapsing and then compressing the a ff ected lung. The mediastinum is displaced to the opposite side, decreasing venous return and compressing the opposite lung. The most common causes are penetrating chest trauma, blunt chest trauma with a parenchymal lung injury and air leak that did not spontaneously close, iatrogenic lung injury (e.g. due to central venepuncture) and mechanical positiv e-pressure ventilation. /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF The clinical presentation is dramatic. The patient is increas ingly restless with tachypnoea, dyspnoea and distended neck veins (similar to pericardial tamponade). Clinical examination may reveal tracheal deviation; this is a late finding and is not - necessary to clinically confirm diagnosis. There will also be hyper-resonance and decreased or absent breath sounds over the a ff ected hemithorax. Tension pneumothorax is a clinical diagnosis and treatment should never be delayed by waiting for radiological confirmation. Always treat it with a high index of suspicion of being present (Figure 29.3). Treatment consists of immediate decompression. This was historically taught by rapid insertion of a large-bore cannula into the second intercostal space in the mid-clavicular line of the a ff ected side, follo wed by insertion of a chest tube through the fifth intercostal space in the anterior axillary line. However, current teaching advocates undertaking decompression in the safe triangle – defined posteriorly by latissimus dorsi, anteriorly by the lateral border of pectoralis major and inferiorly by a line perpendicular to the nipple going to the back, just anterior to the mid-axillary line – or, in extremis, a finger thoracostomy at the same location. Pericardial tamponade Pericardial tamponade needs to be di ff erentiated from a tension pneumothorax in the shocked patient with distended neck veins. It is most commonly the result of penetrating trauma. Accumulation of a relatively small amount of blood (50 /uni00A0 mL) into the non-distensible pericardial sac can produce compression of the heart and obstruction of the venous return, leading to decreased filling of the cardiac chambers during diastole. All patients with penetrating injury anywhere near the - heart plus shock must be considered to have a cardiac injury until proven otherwise. Classically , the presentation consists of central venous pressure elevation, a decline in arterial pressure with tachycardia and mu ffl ed heart sounds. However, in cases

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