

Pericardial effusion

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There is continuous production and resorption of pericardial fluid; if this balance is disturbed, a pericardial effusion may develop. If the pressure exceeds the pressure in the atria, compression will result in reduced venous return and compromised circulation. This state of affairs is called tamponade. A gradual build-up of fluid (e.g. malignant infiltration) may be well tolerated for a long period before tamponade occurs, and the pericardial cavity may contain up to 2 litres of fluid. Acute tamponade (from penetrating trauma, coronary angiography or postoperatively) may occur in minutes with small volumes of blood. The clinical features are low blood pressure with a raised jugular venous pressure and paradoxical pulse. Kussmaul's sign is a characteristic pattern that is seen when the jugular venous pressure rises with inspiration as a result of the impaired venous return to the heart. - Emergency treatment of pericardial tamponade is aspiration of the pericardial space. A wide-bore needle is inserted under local anaesthesia to the left of the xiphisternum, between the angle of the xiphisternum and the ribcage (Figure 59.30). The needle is advanced towards the tip of the scapula into the pericardial space. An ECG electrode attached to the needle will indicate when the heart has been touched. This will relieve the situation temporarily until the cause of the tamponade is established. Penetrating wounds of the heart usually require exploration through a median sternotomy . Emergency room thoracotomy is rarely required. Chronic tamponade is usually a result of malignant infiltration of the pericardium (usually secondary carcinoma from breast or bronchus) or, very occasionally , uraemia or connective tissue disease. Treatment some times requires a pericardial window between the pericardial space and the pleural or peritoneal space.

Figure 59.30 (a) Pericardial aspiration through the subxiphoid region. (b) Site of needle insertion for pericardial aspiration.

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