Patient to breathe independently of the respirator while believing that he is still supported by mechanical ventilation. This placebo method of mechanical ventilation may have a role in certain patients who are “difficult to wean.”

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REFERENCE


Clinical Management of the Apparently Insignificant Penetrating Anterior Chest Wound

To the Editor:

Immediate thoracotomy and cardiorrhaphy is indicated in the patient who initially has an obvious cardiac wound, with or without tamponade, or one who has persistent bleeding;1,2 however, there is no consensus concerning the management of patients with small, apparently insignificant wounds in the anterior portion of the chest. These patients initially have small wounds in the anterior portion of the chest, normal vital signs, and a normal chest x-ray film. We observed the autopsy of a man who died at home, eight hours after his release from an emergency center. He had spent 30 minutes in the emergency center, where he was evaluated for a small wound in the anterior portion of the left side of the chest. He was released without further observation because the entrance wound was small, his vital signs were normal, and his chest x-ray film was unremarkable. Autopsy revealed a laceration of the main pulmonary artery and cardiac tamponade.

We would like to describe what we consider to be the logical sequence of diagnostic and therapeutic steps for the clinical management of patients with apparently minor penetrating wounds of the chest.

Plan of Clinical Management

Patients with penetrating wounds in the anterior portion of the chest should have a thorough history elicited, a physical examination performed, and chest x-ray film obtained. The wound should be explored under local anesthesia, enlarging the stab wound to examine the depth of penetration. If the stab wound penetrates the fascia of the musculature of the anterior chest wall, the patient should be admitted to the hospital. A baseline complete blood cell count, electrocardiogram, and echocardiogram should be performed. All patients should be observed for at least 36 hours and during this period should be followed by electrocardiographic monitoring and frequent determination of vital signs.

A logical sequence of studies, adjusted to the patient’s clinical course, should follow. Measurement of the central venous pressure should be utilized to determine early changes in ventricular filling and pressure due to accumulation of blood in the pericardial cavity. An echocardiogram should be performed every 12 hours, since the test can be performed at the bedside without discomfort to the patient. Early detection of small increments in pericardial fluid, ascertained by echocardiographic studies, is a key feature of this plan of clinical management; such positive findings on the echocardiogram should be an indication for pericardiocentesis.

Pericardiocentesis should be performed through the subxiphoid route with a Teflon catheter (Angiocath), in order to avoid cardiac damage. After the pericardium has been entered, only the soft catheter should be left in situ.

If the findings from pericardiocentesis are positive, the Teflon catheter should be left in the pericardial cavity for decompression and prevention of tamponade while preparations are made for immediate thoracotomy. At thoracotomy, cardiorrhaphy should be performed.

This plan of clinical management requires that patients with penetrating wounds of the chest be treated in hospitals where echocardiographic studies can be performed. Likewise, surgeons, operating rooms, and personnel should be immediately available, since the sudden hemodynamic changes that occur in some of these patients require immediate surgical intervention.

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COMMUNICATIONS TO THE EDITOR 887