I know what you did after school

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A 17-year-old male presented to the emergency department in a blood-stained school uniform. He looked weak and pale. He was rushed to the major-resuscitation area. He had apparently been stabbed multiple times after school. The weapon was a narrow, 6-inch knife.

Primary survey revealed an intact airway and slightly diminished breath sounds over the right lung field. His trachea was midline, and his neck veins were not distended. Initial blood pressure was 85/50 mm Hg, heart rate was 50 beats/min, and capillary refill was slightly delayed. His Glasgow Coma Scale score was 15.

Initial resuscitation included administration of 2 litres of normal saline, application of 100% oxygen, after which the blood pressure increased to 105/60 mm Hg and the heart rate increased to 84 beats/min. A stat portable chest x-ray was ordered, and a urinary catheter was inserted to guide the fluid resuscitation.

Secondary investigation revealed 3 separate 2-cm lacerations over the anterior chest. Two of the lacerations were on the right chest, both at nipple height, one was located just medial to the nipple and the other at the anterior axillary line. The third chest laceration was on the left side, just lateral to the nipple, also at nipple height.

Thorough exposure revealed 2 other lacerations to the right deltoid region, which did not cause any neurovascular injuries to the limb. Findings on abdominal examination were normal. An upright chest x-ray (Fig. 1) revealed what appeared to be an elevated right hemidiaphragm, but no pneumothorax.

The correct diagnosis and treatment are

A. lacerated diaphragm / laparotomy
B. hemothorax / chest tube placement
C. phrenic nerve injury / supportive care
D. hemopericardium / ED thoracotomy

For the Answer to this Challenge, see page 237.