

CLINICAL DILEMMA

A 26 year old man was admitted to your hospital after a road traffic accident. He had abdominal pain and was found to be breathless and cyanosed on examination. His chest X ray is seen in figure 1.

1. What is the abnormality seen?
2. What complications may occur with it?
3. What is the treatment?

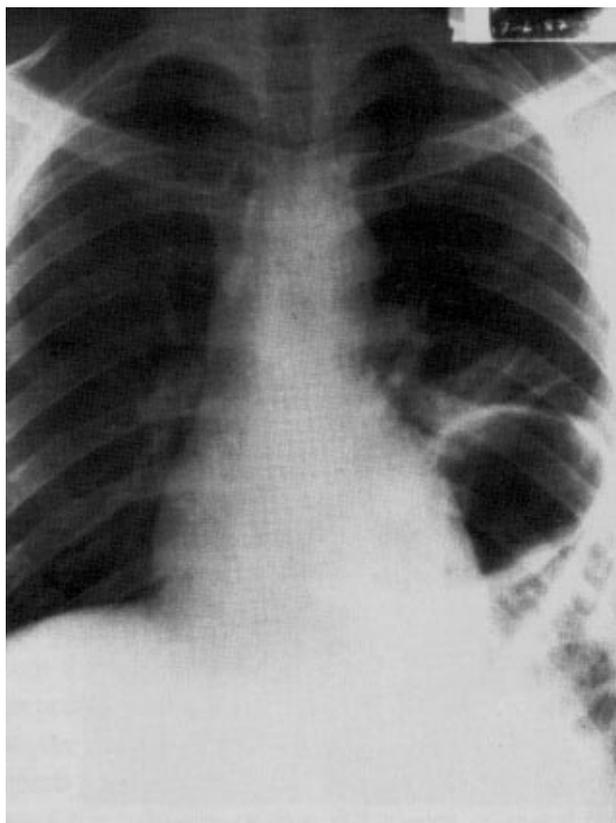


Figure 1.

Answers

1. The X ray shows a traumatic rupture of the left diaphragm with bowel in the chest.
2. The bowel may herniate through the tear as is seen in the X ray. If gastric dilation develops severe respiratory distress may result. If treatment of the herniation is delayed ischaemia may develop in the affected bowel leading to gangrene.
3. Many cases of ruptured diaphragm are associated with other intra-abdominal injuries and it is usually repaired at the same laparotomy.

Treatment should include oxygenation, resuscitation and in the presence of a lot of gastric air the passage of a nasogastric tube. During anaesthesia ventilation should be controlled due to the inefficient ventilation resulting from this injury.

Comment.

Traumatic diaphragmatic hernias are more often described on the left than the right. They are usually the result of severe blunt trauma which causes a tear in the dome of the diaphragm resulting in herniation. Since the intra-abdominal pressure is higher then, the pleural pressure bowel will tend to move into the thoracic cavity.

There is often a delay in diagnosis until breathlessness results from gastric dilation. Clinically the patient may have reduced air entry on the effected side, and bowel sounds may be audible in the left chest. A chest X ray may reveal the characteristic changes seen in the example, or may be misdiagnosed as Penetrating trauma may also cause lacerations of the diaphragm which are usually small. Herniation is less common at the time of injury, but the patient may present years later when a hernia develops.

showing other changes at the left base such as pleural fluid or basal consolidation. If the stomach is dilated the X ray may suggest a pneumothorax, which if drained would reveal gastric contents. If a nasogastric tube has been passed it may be seen in the chest on X ray. The condition is also sometimes diagnosed at laparotomy performed for other abdominal injuries. In cases of doubt a chest

X ray taken after ingestion of contrast material will confirm the diagnosis. After diagnosis, treatment should not be delayed due to the potential complications discussed earlier. The left diaphragm is usually repaired at laparotomy, right sided injuries (which are uncommon and may be difficult to diagnose) via a thoracotomy.
