injected with 0.2 ml. of 24 hr. culture, was moribund after 24 hours: the tests were slightly swollen, gram-negative rods were demonstrated in the spleen and Whitmore's bacillus was cultivated from the blood. The laboratory of the London School of Hygiene and Tropical Medicine (by courtesy of Dr. Paul Chadwick) kindly confirmed the identification. The antibiotic sensitivities are recorded in the following table:

<table>
<thead>
<tr>
<th>Antibiotic incorporated in blood agar medium</th>
<th>Growth of Whitmore's bacillus aerobically after 24 hr. incubation at 37°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin 1 unit/ml</td>
<td>+</td>
</tr>
<tr>
<td>Penicillin 10 units/ml</td>
<td>+</td>
</tr>
<tr>
<td>Chloramphenicol 10µg./ml</td>
<td>0</td>
</tr>
<tr>
<td>Novobiocin 10 µg./ml</td>
<td>0</td>
</tr>
<tr>
<td>Streptomycin 3µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Streptomycin 20 µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Sulphathiazole 100 mg.%</td>
<td>0</td>
</tr>
<tr>
<td>Vancomycin 10 µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Oxytetracycline 2 µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Oxacillin 2 µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Erythromycin 10 µg./ml</td>
<td>+</td>
</tr>
<tr>
<td>Neomycin 10 µg./ml</td>
<td>+</td>
</tr>
</tbody>
</table>

Necropsy. The body was that of a rather thin Indian with greying hair, scars over shins, old surgical suprapubic scar, recent 2 cm. incision below right Poupart's ligament, and other 2 cm. long, in left loin over last rib. Beneath the latter was a healing subcutaneous abscess without deep connections, but overlying a haemorrhagic area in muscle. A similar haemorrhagic area was found in the fascia beneath the pectoral muscle near the right axilla. The region round the spleen showed many pockets of pus loculated by fibrous tissue. A few drachms of greenish pus were present at the splenic hilum and the neighbouring tail of pancreas showed some fibrosis. Adhesions to the splenic flexure of the colon and the greater curve of the stomach formed, with the left dome of the diaphragm, the boundaries of a burrowing type of abscess. Pus was recovered from behind the left suprarenal, from beside the coeliac axis and from an area just in front of and below the cardia. At the centre of this septic area, the enlarged spleen (685 g.) was converted into a tough-walled sac containing semi-diffusent pink pulp. The splenic vein was clean and patent. No abscesses were seen in the enlarged fatty liver (2,305 g.). Fairly numerous pyaemic abscesses, up to 1 cm. diam., with haemorrhagic borders, were present in both kidneys (left 255 g., right 125 g.). The supraprostatic and prostatic were normal and there was no connection between the left kidney and the abscess in the left hypochondrium. The abscess did not penetrate the left dome of the diaphragm, but organizing fibrous exudate, within a little turbid fluid, was present at the base of the left lung. Both lungs showed oedema and congestion, and contained numerous small pyaemic abscesses. An area (2.5 cm. diam.) of reactivated fibro-caseous tuberculosis was found at the apex. An old fibrous myocardial infarct was present in the posterior wall of the left ventricle of the heart (320 g.). Section of the spleen showed simple perisplenic abscess formation.

The case was under the care of Mr. Stephen Powis, M.S., and Dr. Ronald Hartley, M.R.C.P., to whose care I am in debt.

REFERENCES


HAEMATOMA OF CHEST WALL DUE TO COUGHING

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FRACTURE of ribs (Jones, 1907; Palfrey, 1924; Watson-Jones, 1955) and tear in inferior (deep) epigastric vessels resulting in a haematoma of the abdominal wall (Bowles, 1939; Murray and Burger, 1954; MacKenzie and Macbeth, 1964; Rains and Capper, 1965; Stiles, Raskowski and Henry, 1965) have been described as the complications of violent coughing. Sudden muscular strain has also been responsible for the subcutaneous rupture of the rectus abdominis muscle (Illingworth and Dick, 1963). The development of a haematoma of the chest wall due to coughing has not yet been mentioned in the literature.

Case Report

D.C., aged 55 years, was admitted to East Birmingham Hospital on 13th October, 1964 with cough and shortness of breath. For the past 4
years he had suffered from bronchitis with asthma. He was well built, with BP 150/100 mm. Hg. Abnormal physical signs were confined to the respiratory system. The chest was emphysematous with widespread rhonchi in both lung fields. Tetracycline and aminophylline gave him relief from the shortness of breath and cough. Nine days later his cough became worse and on 24th October the patient complained of a moderately large swelling in the right pectoral region. During the course of the next few days the overlying skin became discoloured and the skin pigmentation due to extravasated blood spread widely on the chest, the trunk, the right arm and thigh (Fig. 1). On aspiration of the swelling 50 c.c. of blood was withdrawn with difficulty. The chest X-ray did not show any fracture of the ribs nor a lesion that could have accounted for the haemorrhage.

Investigation: Hb. 14 g.%; ESR 5 mm./hour (Wintrobe); WBC 8,000 cu. mm., a normal differential; Platelets 265,000 cu. mm.; Serum albumin 4.2 g.%; Globulin 2.9/100 ml.; Bleeding time 2½ min., clotting time 5 min. (Lee and White method); Prothrombin time 15 sec. (control 13 sec.); Latex (RA) test negative; LE cell phenomenon not demonstrated on three occasions; Skeletal muscle (Rt. biceps brachii and pectoralis major) biopsy—normal histology; Hess's tourniquet test for capillary fragility—negative.

On 29th October, the right pectoral haematoma was incised under general anaesthesia. No active bleeding was seen. The blood clots which were found to lie between the pectoralis major and minor muscles were evacuated and a corrugated rubber drain was left in. The specimen on microscopic examination was shown to consist of blood with commencing organisation by granulation tissue. Gradually over a period of weeks the skin discolourisation disappeared. The bronchitis improved with the medical treatment and he left hospital on 11th December.

Comment

The bleeding might have been due to trauma, a bleeding disorder, a complication of arteritis in a collagen disease or to a tear in the regional blood vessel following a violent bout of coughing.

This patient gave no history of injury or of abnormal bleeding, and moreover the investigations rule out the presence of haemorrhagic disease. There was no clinical history or manifestation to support the diagnosis of a collagen disease, and the serum proteins, ESR, and skeletal muscle biopsy were normal and LE cells absent.

Violent coughing puts strain on the accessory muscles of respiration. 'Cough fractures' of ribs are known to have occurred due to coughing (Jones, 1907; Palfrey, 1924). The inferior epigastric vessels may also be torn and its possibility is always considered when a tender lump in the rectus abdominis muscle follows a bout of coughing. Having excluded the other possible causes of bleeding it is inferred that the haematoma in this case developed as a result of a tear in the regional vessels which might have also been associated with rupture of some of the fibres of the right pectoralis muscles. The tear could have involved superior thoracic vessels, the pectoral branch of thoraco-acromial vessels or their muscular branches.

We wish to thank Dr. H. J. T. Ross for his permission to publish this case, and Dr. S. P. Singh for his helpful suggestions.

REFERENCES


