CLINICAL RECORDS

A CASE OF MEDIASTINITIS

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WHILE drinking tea on *November 14th, 1944*, Sapper J. H., aged 42, felt in his throat something which he regarded as a piece of wood. After this, he felt discomfort in the left side of the throat about the level of the thyroid cartilage, on swallowing or lying down, but he was still able to swallow solids and liquids. He reported sick two days later and was admitted to a Middle East general hospital.

On examination, some injection of the left pharyngo-epiglottic fold was noted and there was an excess of mucus present. X-rays revealed no opaque foreign body, but screen examination showed some delay in the passage of barium, with no localized deformity. Four days after the accident he was entirely free of symptoms and indirect laryngoscopy revealed normal findings.

In view of the delay in the passage of barium, *œsophagoscopy* was considered advisable, to exclude neoplasm. This was carried out, under local anæsthesia, on *November 22nd*—eight days after the accident and four days after all symptoms had disappeared (R.B.L.). On the right side of the posterior wall in the lower post-cricoid region, a narrow horizontal slough was found. There was no evidence of a foreign body. Sterile water only was allowed and dry sulphathiazole powder was swallowed at four-hourly intervals.

Twenty-four hours later his temperature was 100°, pulse-rate 112 and respirations 22 : there was some fullness of the supraclavicular region on both sides and an area of surgical emphysema on the right side. Heart and lungs were normal. Water by mouth was stopped and continous intravenous glucose saline administration was commenced, with the addition of sodium sulphathiazole (6 grams in 24 hours). Intramuscular penicillin was started (15,000 units 3-hourly).

At the end of a further 24 hours the patient's condition was unchanged. X-ray examination showed :—(1) Enlargement of the upper mediastinal shadow on the right side, with a well-defined limiting margin extending from the root of the lung upwards into the neck. (2) Surgical emphysema in the lower neck, especially on the right side (Fig. 1). On this day (*November 24th*) *mediastinotomy* was carried out (R.B.L.) under pentothal and cyclopropane anæsthesia (Lt.-Col. Brennan), through an incision low down on the anterior border of the right sternomastoid muscle. The omo-hyoid was retracted downwards and medially, the pre-tracheal fascia was divided and 2-3 ounces of offensive purulent fluid was evacuated. No foreign body was found. A rubber drain was inserted and the wound partly closed. On *culture* of the pus there was a moderate growth of hæmolytic streptococcus and a slight growth of *Staphylococcus aureus*. Both were *penicillin-sensitive* (factor 1·0) but *sulphathiazole-resistant*.

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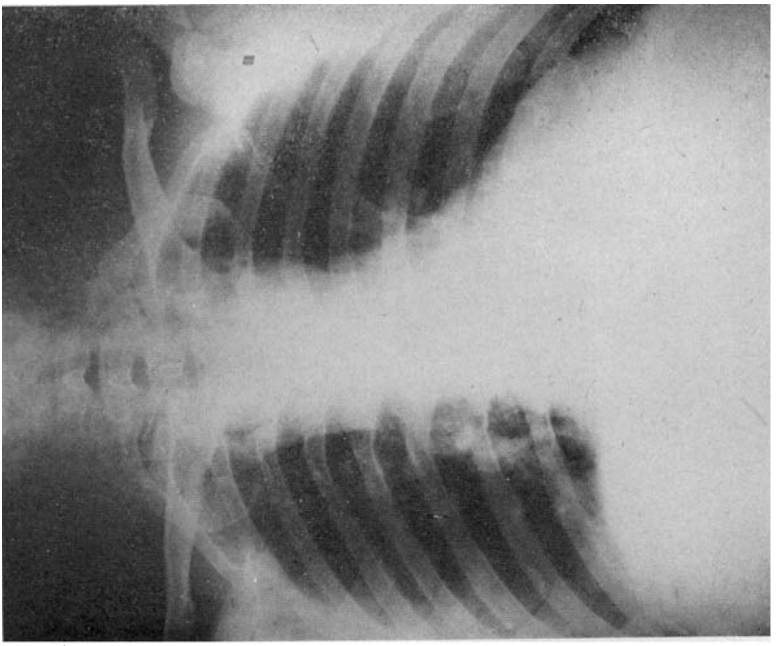


Fig. 2.
Showing decrease of mediastinal shadow.

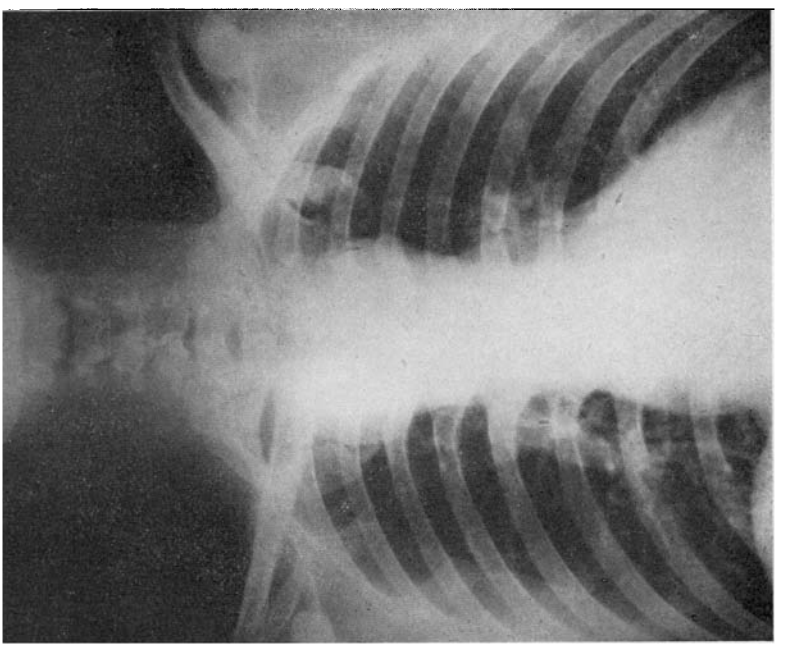


Fig. 1.
Showing enlargement of the upper mediastinal shadow.

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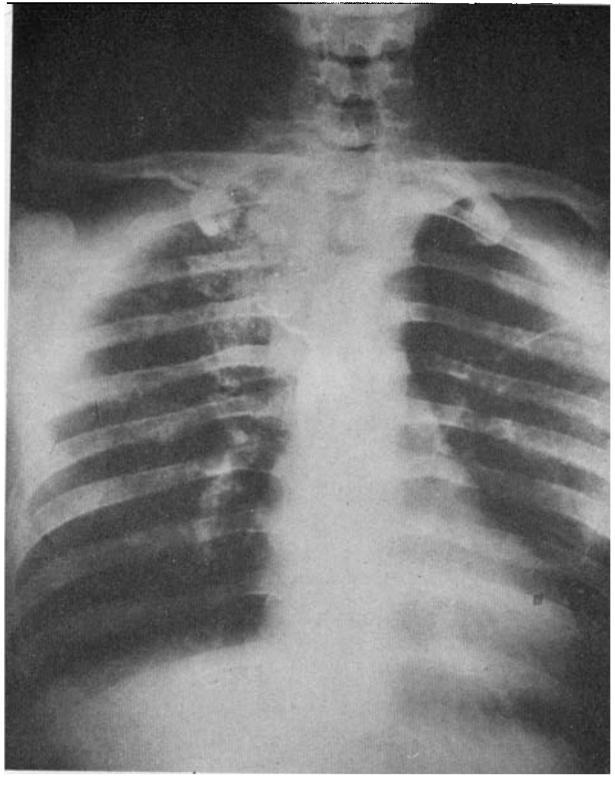


FIG. 3.
Showing lipiodol at the level of the 6th dorsal vertebra, in the mid-line.

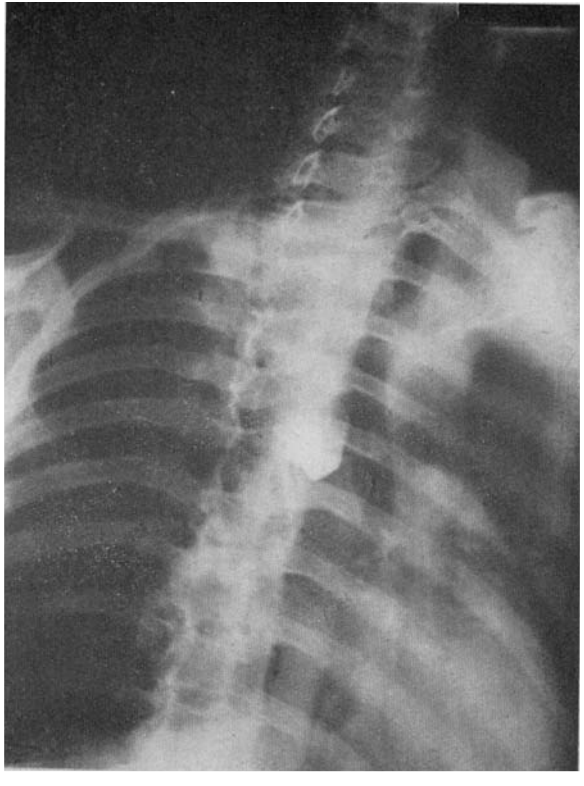


FIG. 4.
Showing lipiodol in the posterior mediastinum.

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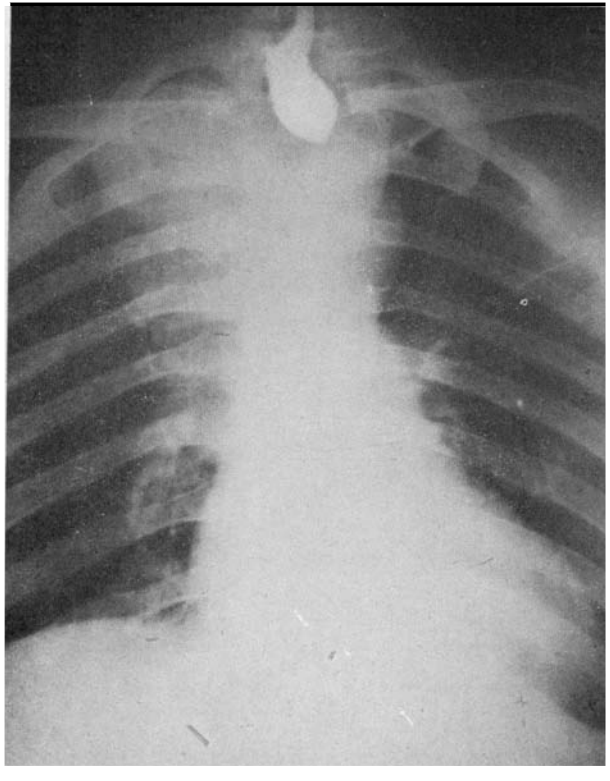


FIG. 5.
Showing hold-up of barium in the upper œsophagus.

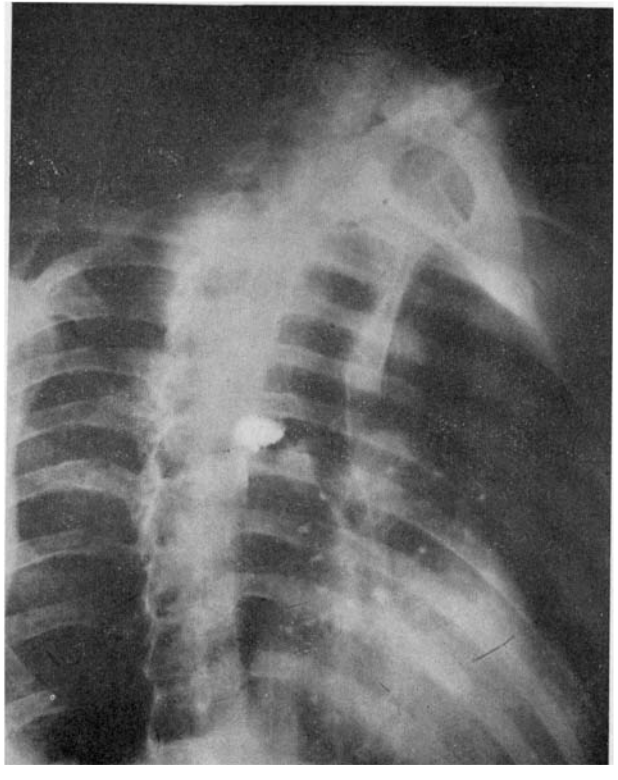


FIG. 6.
Showing hold-up of barium in the middle œsophagus.

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Temperature and pulse remained elevated for several days, but the patient's general condition improved. There was profuse offensive discharge from the neck wound. Three days after operation, X-rays showed no appreciable change; sodium sulphathiazole was stopped (Total during *first* course—24 grams). The white cell count was 10,400 with 72% polymorphs, hæmoglobin was 95%. A swab taken from the wound gave a moderate growth of *Staphylococcus aureus* which was now penicillin-*resistant*; and a slight growth of a non-hæmolytic streptococcus, slightly penicillin-*sensitive* (factor 0·4). A few sips of boiled milk appeared in the neck wound; therefore, on *November 29th*, a *gastrostomy* was performed under local anæsthesia (Lt.-Col. Marnham), after which the intravenous drip was discontinued. Further X-ray examination at this stage showed no appreciable change, but on *December 5th* (eleven days after drainage operation) the mediastinal shadow had decreased appreciably and the surgical emphysema in the neck had resolved (Fig. 2).

Penicillin was stopped (Total during *first* course—1,315,000 units). A swab from the wound at this stage gave a heavy growth of *Staphylococcus aureus*—penicillin-*resistant*, a moderate growth of non-hæmolytic streptococcus—penicillin-*sensitive*; and a slight growth of diphtheroids—penicillin-*sensitive*.

Improvement was maintained till *December 10th*, when temperature and pulse-rate again rose and he complained of pain in the right upper chest on coughing. Physical examination showed some indefinite signs in the right chest, with slightly impaired movement and diminished air-entry. The white cell count was 22,000 with 89% polymorphs. X-ray showed no appreciable change in the mediastinal shadow, but there was some loss of translucency in the right upper lung field, adjacent to the mediastinum. Sulphathiazole by gastrostomy and intramuscular penicillin were resumed (Totals during *second* courses: sulphathiazole—70 grams, penicillin—890,000 units).

On the same evening he coughed up 5 ounces of thick pus and 10 ounces of offensive discharge came away from the neck wound while coughing. Next day there was considerable improvement and thereafter the neck wound gradually cleared up; but during the following four weeks he continued to cough up a variable amount of pus which was sometimes blood-stained. On four occasions during this period, diminution of sputum to 1-2 ounces in 24 hours was associated with a rise of temperature which dropped when the quantity of sputum again rose to about 10 ounces. There was little doubt that a bronchial fistula was present. Culture of sputum gave a moderate growth of *Staphylococcus aureus* which was penicillin- and sulphathiazole-*resistant*; and a slight growth of a non-hæmolytic streptococcus which was penicillin-*sensitive* (factor 1·0). Examination for tubercle bacilli was negative on eight occasions. Gastric contents were acid and contained no pus cells.

On *December 12th* 10 c.c. of lipiodol were instilled into the neck fistula and subsequent X-rays showed that most of this was in the mid-line at the level of the 6th dorsal vertebra, while a small amount reached the upper zone of the right lung (Fig. 3). An oblique view confirmed that this was in the line of the œsophagus in the posterior mediastinum (Fig. 4). On *December 23rd*, having ascertained that the lipiodol had practically cleared, he was given some barium paste (containing sulphathiazole) by mouth, which was seen to be held up above the level of the aortic arch (Fig. 5). Twenty-four hours later

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it was found to be at the level of the 6th-7th dorsal vertebrae—where the lipiodol *viâ* the neck was previously held (Fig. 6).

In consultation on *December 30th*, it was agreed that the necessity for further operation seemed probable and he was transferred to a Chest Unit under the care of A.L.

At this time the patient's general condition was fairly good. There was no abnormal glandular enlargement and no finger clubbing. Rib movements and lung expension were equal. There were some ronchi over both sides of the chest, but especially over the right upper lobe. Liver and spleen were not palpable. He was coughing up 15 ounces of foul-smelling pus daily; but from this time onwards he made slow but uninterrupted progress.

At *bronchoscopy* under local anæsthesia (A.L.), on *January 12th, 1945*, some muco-pus was seen in the eparterial bronchus and there was some œdema of its ostium but no other abnormality. Sputum culture gave a growth of non-hæmolytic streptococcus and diphtheroids. A *bronchogram* (A.L.) showed no evidence of escape of lipiodol from the bronchi and the bronchial outlines were not grossly abnormal. A *barium swallow* on *April 13th* showed a stricture of the œsophagus just below the cricoid cartilage, with a partial hold-up of barium above it. There was an irregularity in the shadow at the level of the 6th dorsal vertebra. *Œsophagoscopy* under local anæsthesia (A.L.) showed a stricture two inches below the upper end of the œsophagus.

The patient was very well when discharged from hospital on *April 20th*, for evacuation to the United Kingdom; but it was considered most probable that subsequent œsophageal bouginage would be required.

Our thanks are due to Major W. S. Shearer, Radiologist, for his helpful co-operation in dealing with this case.

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