

and apparently composed of pleura which is thickened in that region. Through this clear area the details of the ribs and scapula can be made out; there is very little evidence of detail of the lung. The lower margin is irregular and ill defined, and shows strands of denser tissue with clear areas between. The general appearance is strongly suggestive of air in the pleural cavity. It has not the typical appearance of a large pneumothorax, and is more typical of gas within a distended viscus. The nature of the appearances described was clearly indicated when an opaque meal was given to the patient and a series of radiograms composed. The whole of the meal was seen to be retained on the left side, extending from a sharply defined point at the level of the first lumbar vertebra, and extending upwards to a point at the level of the seventh dorsal vertebra. The opaque shadow, with the gas-distended space above it, occupied about two-thirds of the total thoracic space on the left side. Above the shadow of the opaque material in the viscus was a clear area, and at a still higher level a dome-shaped structure representing the limitations of the above-described air space. This structure most probably consisted of thickened pleura, and formed a limiting membrane for the herniated stomach.

The x-ray examination with the opaque food showed clearly that the stomach was situated in the thoracic cavity; the irregularity of the diaphragm and the gas formation seen in the earlier pictures are suggestive of the diagnosis, but no positive opinion could be expressed until the stomach had been filled with the opaque food. It is interesting to note that later negatives showed that limiting structure of the air space was capable of contracting to some extent upon the stomach, and this is shown by the negatives, in which the stomach is seen to contain less of the food than in those of an earlier period.

The radiograms taken on June 28th, 1921, after the patient had been operated upon, show a different appearance from those taken when he was first examined.

The upper surfaces of the diaphragm are practically on the same level. On both sides of the chest the lung detail is well seen; there is no sign of the gas, the heart now occupies a normal position, in strong contrast to the position it assumed in the first pictures, in which it was displaced well over to the right. The lungs show an increase of the root shadows, and there is evidence of enlarged glands at the roots with peribronchial thickening extending into the lung substance.

## AN UNUSUAL CAUSE OF DEATH FROM CANCER.

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[With Special Plate.]

THE case recorded below seems to me of sufficient interest to warrant publication. The microphotographs printed in the special plate are self-explanatory, but the accompanying diagram will indicate the relations of the low-power view.

### History.

E. E., female, aged 43, was admitted to the Christie Hospital, Manchester, on January 11th, 1922, suffering from an inoperable carcinoma of the larynx, which had required tracheotomy at the Manchester Royal Infirmary twelve days previously, to relieve urgent symptoms. She was comfortable until early in the morning of January 24th, when she awoke with severe pain over the precordium. At 1 p.m. she suddenly became very much worse, and was reported as almost pulseless. After the administration of camphor, ether and brandy hypodermically, and of mustard leaves over the precordium she was somewhat relieved.

### Examination.

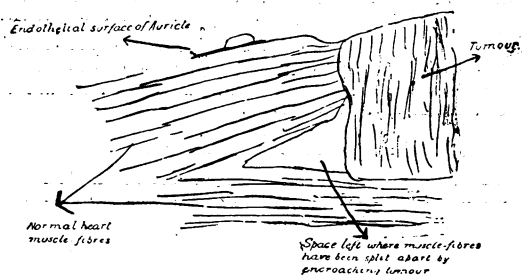
The patient was very pale and obviously dying. The pulse was almost imperceptible and the heart sounds were very weak, but there was no dilatation of the organ and no bruits could be heard. There were moist sounds at the base of the left lung. These were the only *ante-mortem* findings of note except for slight sepsis round the tracheotomy tube. The diagnosis seemed to lie between cardiac embolus and an acute mediastinitis. The patient died at 2 a.m. the next day, January 25th.

### Post-mortem Examination (3.30 p.m., January 25th, 1922).

The tissues around the tracheotomy wound were infiltrated with the primary carcinomatous growth. On opening the chest there was found a left-sided pleurisy with a small amount of fluid and some collapse of the lung. An abscess of this lung was seen

to have burst into the pleural cavity. Nodular secondary growths were found on the pericardium and the left pleura, and there were deposits in the bronchial glands.

The heart was of normal size, firmer than normal, and on opening the cavities *ante-mortem* clot was found in all but the left ventricle. The clot was particularly firm in the right auricle, and on removing it a papillomatous mass the size of a pea was found projecting into the cavity from the smooth endothelial wall. There was no indication of this mass on the outer aspect of the auricle, and it seemed to be arising immediately under the endocardium.



Histological examination of this growth shows the typical structure of squamous-celled carcinoma (see high power microphotograph). From the facts that it is infiltrating the subendothelial heart muscle and is separating the muscle fibres (as seen in the low-power microphotograph) it would appear that the embolus had arrived via the blood or lymphatic system, and that it was not an implant on the auricular endothelium from embolism down the superior vena cava.

The position of the tumour is of interest, and by promoting thrombosis in this cavity it accounts, in my opinion, for the fatal termination of the disease within twenty-four hours of the onset of acute symptoms.

My thanks are due to Dr. Charles Powell White for his histological investigation of the case and for allowing me to prepare the microphotographs from one of his sections.

## SOME NOTES ON ORAL SEPSIS IN ITS RELATION TO GENERAL DISEASE.\*

BY

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[With Special Plate.]

SINCE the year 1900, when Dr. William Hunter first wrote in regard to oral sepsis and its connexion more particularly with anaemia, increasing attention has been given to it as a factor in many other diseases. Sir Thomas Barlow at that time made reference to its importance. The practical result was the recognition of oral sepsis as the greatest septic infection in medicine, and oral antisepsis as one of the most important, simplest, and easiest means for the prevention of groups of maladies affecting almost every system of the body.

It has been said that the alveolar process—with the exception of the intestines—is the largest and the most frequently diseased part of the body from which toxins are liable to be absorbed. A very small amount of toxin absorbed from the alveolar process will do more harm than a large amount absorbed from the intestinal tract, as the toxins are carried direct into the circulation, and not—as in the latter case—through the portal vein into the liver.

Oral sepsis is a comprehensive term, and includes pyorrhoea, alveolar abscess, and the pathological conditions existing at the root of a dead tooth. With regard to pyorrhoea we have to remember that it could not occur without streptococci and staphylococci. It is the penetrating activity of the streptococcus which creates the bleeding lesion, thus opening the way for the staphylococcus, which dissolves the tissue and creates the pocket. Probably the most common of the ill effects of oral sepsis is a state of malaise, in which the patient complains of tiredness, slackness, lassitude, and a general though indefinite feeling of unfitness. We may get functional cardiac effects, such as palpitation, or a state of nervous debility and depression.

### Oral Sepsis and Disorders of the Heart.

In speaking of its effect upon the heart, in addition to the functional disturbances associated with indefinite malaise

\* Read at a meeting of the South-Western Branch of the British Medical Association

JENNINGS MARSHALL : SUTURE OF RUPTURED LEFT DOME OF DIAPHRAGM.

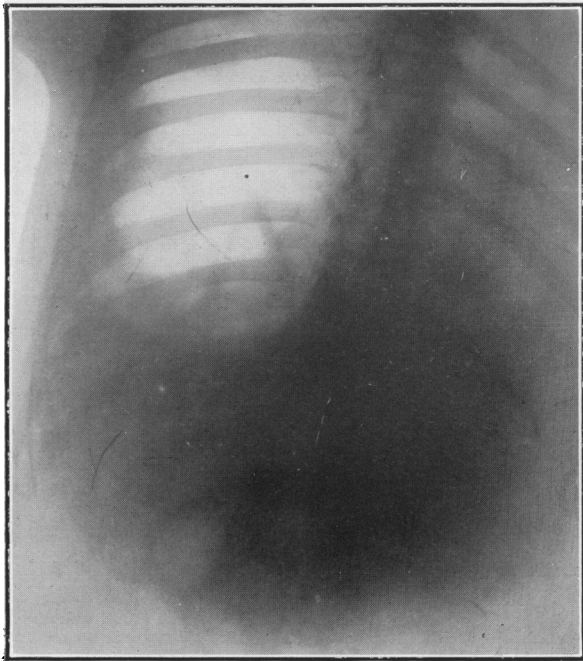


FIG. 1.—Radiogram of chest, showing hernia (on left side), stomach, and transverse colon (without bismuth meal).

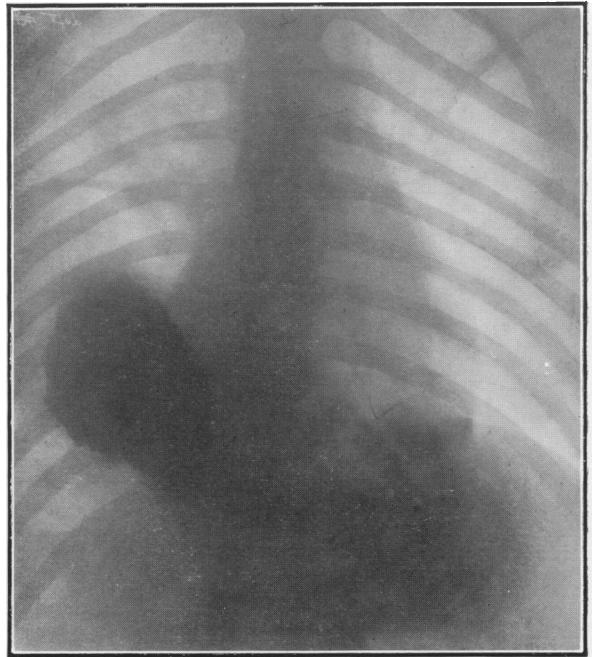


FIG. 2.—Radiogram of chest, showing bismuth meal in stomach (in hernia).

J. M. ACKLAND : ORAL SEPSIS IN RELATION TO GENERAL DISEASE.

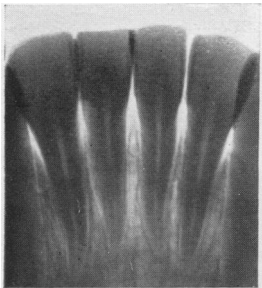


FIG. 1.—Normal lower incisors.

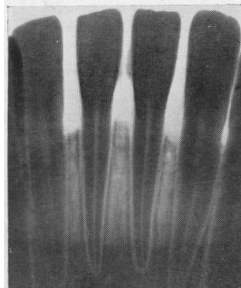


FIG. 2.—Pyorrhoea.

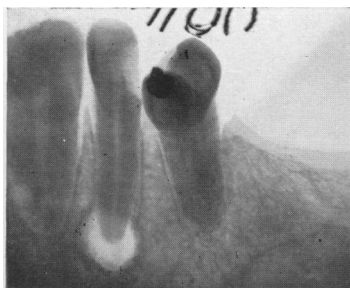


FIG. 3.—Apical abscess.



FIG. 4.—Root abscess.

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