Clinical and other Notes.

AN OBSCURE LUNG CASE.

By MAJOR D. C. G. BALLINGALL, M.C.,
Royal Army Medical Corps.

The following case in a healthy young soldier caused considerable difficulty in diagnosis:

On June 10, 1931, Private W. S., aged 24, service six years, a healthy-looking well-built man, teetotal and non-smoker, reported sick and was detained at the Camp Hospital, Shanhaikuan, China, with sudden onset of malaise, pains in upper part of the left chest and pyrexia. There were no physical signs.

The fever persisted, and he had a series of haemoptyses. On June 12 he was transferred to the British Military Hospital, Tientsin, where the case was diagnosed as left (lobar) pneumonia.

He was a Londoner, had been a shop assistant, and had had no serious illnesses.

On July 2 a radiogram of the chest showed the apex of the left lung to be hazy and a rounded shadow in the upper part of the hilum. The right lung was normal.

On July 4 he was transferred to Shanhaikuan Seaside Camp for convalescence.

On July 12 he started a "riding sore" on the right shin, which healed in one week, but left a large, tender, hard lump in the right groin (inguinal gland). With this he "hung about the Camp Hospital" for six weeks until he volunteered for duty with his company, which had returned to Tientsin.

On October 3 he was re-admitted to the British Military Hospital, Tientsin, with irregular, daily, intermittent fever, temperature 103° F. and pains in left chest and back, headache and "feeling bad all over." Pulse 72 to 80 per minute; respiration normal. No definite physical signs could be found. The temperature apparently responded at once to quinine, although repeated unsuccessful search was made for malaria parasites.

On October 7 a radiogram of the chest indicated that: (i) the apex of the left lung had cleared up; (ii) the shadow seen at the upper part of the left apex had become much larger and more dense and could not be explained. The persistence of an upward cone-shaped protuberance of the right cupola of the diaphragm suggested the presence of a liver abscess (no cysts were found on repeated examination of the stools, and the temperature suddenly and permanently dropped to normal on this date; emetine therefore was not given).

The right inguinal lymph gland was still large and hard, and on
October 19 he was discharged to duty and observation with a diagnosis of anaemia, the temperature and pulse having been normal for twelve days.

On October 23, he was admitted for the third time, looking ill, with a short cough (M.O. reports a "rub" just below the heart). Pulse 110; respiration 30; temperature 103° F., and hectic in type. Physical signs indefinite. Repeated examination of the scanty sputum failed to show tubercle bacilli.

Blood examination showed red corpuscles, 5,200,000; haemoglobin, 80 per cent; white corpuscles, 10,000. Differential count: Normal except for polymorphonuclear leucocytosis.

![Photograph of lungs, heart, kidneys and suprarenals.](http://militaryhealth.bmj.com/)

Wassermann reaction positive. Patient frankly denies possibility of venereal disease. Congenital syphilis of the left lung, mooted as a diagnosis. Right inguinal lymph gland was gristly hard, irregular, not inflamed or fixed, and the size of a bantams’ egg. Left supraclavicular gland was enlarged and hard. The possibility of lymphosarcoma was considered.

On October 27, a radiogram showed left pleural effusion.

On November 1, a second radiogram showed almost complete opacity of the left side of the chest. The right inguinal gland was dissected out under a local anaesthetic and cut in half. The capsule appeared to be intact and the cut surface was firm, homogeneous and pinkish in colour. One
half was sent to the China Command Laboratory, Hong Kong, and the other to the Peiping (Peking) Union Medical College. The physical signs in the left lung suggested hydro-pneumothorax, and the patient complained of "rumbling" in the chest on turning in bed, indeed this could be heard two yards away! but aspiration proved abortive, only a little air being withdrawn.

Active anti-syphilitic treatment was given in the hope that the condition was specific in nature, but the arrival of reports on the lymph gland on November 14 proved it to be malignant. From this time the patient rapidly lost condition on account of toxæmia, dyspnoea and severe pains in the chest for which he had to be kept under the influence of narcotics. His temperature dropped from 104° to 96° F. He became comatose, and died on November 22.

The post-mortem examination showed the right lung and pleura to be healthy. The left pleural cavity contained much evil smelling grumous fluid and some gas — air. The pleura was adherent in many places to the parietes and the basal pleura was thickened into hard, cartilage-like nodules. The lung was collapsed (atelectasis), particularly the lower two-thirds, which were bronchiectatic and pregangrenous. There was a hard white homogenous growth the size of a cricket ball involving the lumen of the left bronchus and infiltrating the lung. The left apex showed a small cavity.

The heart was normal, but the pericardium was filled with clear blood-stained effusion.

The abdomen was normal except that the liver was large. The right suprarenal gland contained a large, and the left a smaller, metastatic growth.

Other glands were normal.

The points of interest in this case are:
1. The youth of the patient (24 years).
2. Sudden onset of symptoms resembling pneumonia with hæmoptyses.
3. Early involvement of a right inguinal lymph gland.
4. Hydro-pneumothorax.

REPORT ON ENLARGED RIGHT INGUINAL GLAND FROM THE PEIPING UNION MEDICAL COLLEGE.

The histological picture somewhat resembles that of the so-called "lympho-epithelioma" described by Ewing, which arises from the modified epithelium overlying the lymphoid structures of the nasopharynx and produces early metastasis to the neck.

The presence of some collagen fibres in between the cells is a feature not seen in carcinoma. But, owing to the general alveolar arrangement of the tumour cells and many areas not showing any intercellular matrix, the diagnosis of carcinoma is more likely than sarcoma.
REPORT ON HARD WHITE GROWTH FROM HILUM OF LEFT LUNG, AND ON A LARGE GROWTH FROM RIGHT SUPRARENAL GLAND.

Microscopic Examination of growth from left lung. Section shows irregular masses of dark staining oval or polygonal epithelial cells showing frequent mitoses and growing in an infiltrative fashion. Between the masses are thick bands of hyalinized fibrous tissue stroma. There are many areas of extensive necrosis. Lung tissue and bronchioles are present at corners of the section. Section of the growth from suprarenal gland shows a similar tumour, in the stroma of which cells of the adrenal gland are found. Also adrenal tissue is found at one corner of the section.

Diagnosis.—(a) Carcinoma in lung (arising from bronchial epithelium).
(b) Metastatic carcinoma in adrenal gland.

REPORT FROM THE COMMAND LABORATORY, HONG KONG, NOVEMBER 2, 1931, ON THE ENLARGED RIGHT INGUINAL LYMPH GLAND, BY DR. A. V. GREAVES, GOVERNMENT PATHOLOGIST, HONG KONG.

I do not feel at all certain as to the origin of these cells in the lymph gland. I do not think they are of lymphoid origin—they rather suggest metastasis from an outside focus. There is hardly any doubt as to their malignancy; mitoses are particularly numerous and the manner of growth quite typical.

It is tempting to suggest sarcoma, but the clinical history is rather against a simultaneous growth and inguinal nodes. The most I feel justified in saying is that the section is malignant tissue, probably sarcomatous.

FURTHER COMMENTS BY DR. A. V. GREAVES OF HONG KONG AFTER EXAMINATION OF ADDITIONAL MATERIALS.

Sections of the tumour proper show it to be composed of masses of dark staining cells with large vesicular nuclei; the individual cells being very undifferentiated. Mitoses are numerous. The manner of growth appears to be as strands or columns of cells; the anatomical arrangement, however, in many places shows definite evidence of an attempt at alveolar formation and the carcinomatous structure is plain. In one of the glandular metastases there is some suggestion of collagen fibrils between the cells, but I do not feel quite satisfied about this and it is doubtful to say the least. The metastases show extreme metaplasia and here the likeness to sarcoma is strong. In some areas the histological picture resembles the type described by Adler as medullary carcinoma. As is usual in broncho-pulmonary neoplasms the advanced state found at necropsy makes difficult an exact diagnosis on a histological basis alone, but in this case the excellent pathological preparation pictured leaves no doubt of the close and definite relation to the bronchial tree, and the gross evidence together with the microscopic makes it possible to place the tumour as a carcinoma arising from the bronchial epithelium. Careful search of the sections reveals areas in which the columnar character of the cells can just
be made out and there is also to be seen definite evidence of attempts to line cavities with columnar cells in palisade formation. It is unfortunate that none of the sections shows any of the larger bronchi with which one could attempt to orient the neoplasm. The lung alveoli adjacent to the mass are alternately collapsed and dilated and many of them are filled with tumour masses, producing irregularly distributed areas of neoplastic pneumonia.

One very interesting feature is the comparatively early metastasis to the inguinal lymph nodes, hardly one month after the first complaint and admission to hospital. At this period of the illness extension must have already taken place along the thoracic duct to the deep glands of the upper abdomen, thence along the vertebral chain of lymphatics to the deep glands of the lower abdomen and thence to the inguinal. The adrenals were probably not involved until a much later stage of the process, as debility was not a prominent feature until about three months later. Among the widely distributed sites subject to metastatic invasion the skin is numbered 4 per cent. in Rogers' series; and one cannot help wondering whether the so-called "riding sore" which developed coincidently with the inguinal adenopathy may not really have been a skin metastasis, although the fact that it apparently healed would weigh against it being so. The liver in this case appears to have escaped invasion, which is decidedly unusual; in Adler's series it was involved in 27·5 per cent.; the smaller series recently studied by Rogers showed metastasis in 34 per cent. The latter observer also comments on the frequency of metastasis to the adrenals. Adler gives 14 per cent and 15 per cent as the frequency of involvement of brain and

Fig. 2.—Tumour in lung (× 236).
bones respectively, while Rogers gives 20 per cent and 38 per cent for the same tissues. Here both brain and skeletal tissues seem to have escaped. The absence of metastasis to liver, brain and bone is a noteworthy feature.

My thanks are due to the Department of Pathology, Peking Union Medical College and to Dr. A. V. Greaves, of Hong Kong, for reports on tissues.

Also to Lieutenant-Colonel H. P. Hart, M.C., R.A.M.C., O.C., British Military Hospital, Tientsin, for permission to send these notes for publication.

TWO SUGGESTIONS FROM A LABORATORY IN INDIA.

By Major D. T. M. Large,
Royal Army Medical Corps.

The following two suggestions are handed on to those interested in laboratories and disease prevention, in spite of the fact that they may be regarded by those who are not so interested as the work of a crank. The first if adopted would save a good deal of money in incubators, and the second much disease. Both save trouble, and have been found of service.

(1) INCUBATOR SPACE.

It has always been a matter of surprise to me that incubator makers do not provide several alternative means of accommodating culture tubes, etc., so that the greatest possible use may be made of the space available. They get over the difficulty of suiting everybody by providing no means at all, with the result that incubators are as a rule thoughtlessly packed, space is wasted, and demands are made for more incubators. This doubtless suits the incubator makers, but the difficulty may frequently be got over at an expense infinitesimal when compared with that of getting an extra incubator from the makers in England. Until recently, sets of sugars were incubated by me in ordinary round cigarette tins placed side by side on the incubator shelves, and the waste of space was such that only thirty-two tins could be fitted into the ordinary small Hearson incubator used in military laboratories, and in addition considerable time was lost in arranging the tubes of each set for ready observation. Recently a sugar-tube rack was devised with the help of Lieutenant-Colonel G. K. Lynn, D.S.O., I.M.S., in order to avoid waste of time in arranging the various "sugar tubes" when dealing with large numbers of intestinal organisms, and to economize incubator space. By its use the sugar tubes are kept in the incubator in any desired order ready for inspection, and the rack has only to be taken out of the incubator, inspected, and returned for further incubation without the troublesome necessity of having to arrange each tube separately day by day. The racks are made to fit the incubator, and in the small Hearson there is room for twelve racks, giving accommodation for seventy-two organisms, each put up in