abdomen was slightly distended, nothing abnormal was felt, and there was no tenderness on pressure. There was a "squeaking" bruit just to the left of the sternum, and pulsation to the right of the sternum; the bruit was in all probability cardio-pulmonary.

On May 21st his temperature had risen overnight to 102.4°. His pallor had increased, and he looked ill, and was constipated. His spleen was palpable but not tender, and the liver was not enlarged. Next day the left side of his chest was again aspirated, and 10 c.cm. of opaque, dark, amber-coloured fluid was withdrawn. A sediment appeared on allowing the fluid to stand, and on microscopic examination pus cells and a few cholesterol crystals were seen.

On May 24th his chest was aspirated and 18 oz. of fluid drawn off. The fluid was thicker in consistence than on former occasions; it was greenish-brown in colour and odourless. There was increased sediment, and microscopic examination showed a few cholesterol crystals and many pus cells. A culture of the pleural effusion showed: In aerobic culture, *Staphylococcus aureus*; anaerobic culture, sterile.

On May 30th, as the temperature had been fluctuating between 99.2° (morning) and 102.4° (evening) since May 17th, an operation was decided upon, and about one inch of the seventh rib was resected near the inferior border of the left scapula and 2 pints of pus evacuated. A drainage tube was inserted. Bacteriological examination of the pus revealed in culture a pure growth of *Staphylococcus aureus*.

After this he improved rapidly until June 13th, when he had a sudden rise of temperature to 102.4° and complained of a sore throat. There was a small patch of exudate on the left tonsil, and a few submaxillary glands were palpable. This quickly improved, and his temperature fell to normal on June 16th. On June 25th the left lung was apparently expanding well and the heart was in its normal position. There was still some discharge from the sinus. On July 8th his temperature was normal, his general condition had improved, and he was putting on weight.

He had now lost his cough, and has had no expectoration since his admission to the hospital.

Since compiling these notes he has been discharged from hospital and his condition on leaving was as follows: The breath sounds at the left base behind were clearly audible, but still diminished in front. The "squeaking" bruit had disappeared. The empyema wound was still discharging.

The first case was shown by Dr. Batty Shaw at the meeting of the Association of Physicians on July 12th. I am indebted to Dr. Perkins and Dr. Cecil Wall respectively for permission to publish these cases.

A PERICARDIAL EFFUSION OF "GOLD-PAINT" APPEARANCE DUE TO THE PRESENCE OF CHOLESTERIN.

BY

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THE significance of cholesterol in the body fluids is little understood. In a recent monograph on this subject Adrien Grigaut describes the presence of cholesterol in pleural effusions and hydroceles, but I can find no record of the occurrence of cholesterol in a pericardial effusion.

A. G., aged 32 years, a chauffeur, was admitted to University College Hospital under Dr. H. Batty Shaw on October 15th, 1918. He gave a history of the following symptoms, of five years' duration: Roughness and dryness of the skin; loss of hair; thickness of speech; and, during the last few months, swelling of the feet, legs, and abdomen, and shortness of breath.

His features were heavy, skin harsh and dry, hair coarse and scanty. He was orthopnoeic, cyanosed, and slightly jaundiced. There was a well marked pulsus paradoxus; trace of albumin in the urine; systolic blood pressure, 100 mm.

Examination of the chest showed a great increase in the area of precordial dullness; x rays confirmed, and in the photograph a definite boss could be seen on the right lower border of the shadow. The heart sounds were faintly audible to the right of the sternum.

The condition of the skin and hair was attributed to hypothyroidism; the causation of the pericardial effusion remained obscure. Under treatment with thyroid extract and diuretics his condition improved, although x-ray examination showed no alteration in the pericardial effusion, and on his discharge from hospital in February he was able to resume work and continued at it for six weeks.

He was readmitted to hospital on April 8th, 1919, with severe dyspnoea, weak rapid pulse, cyanosis, jaundice,

marked oedema, and ascites. His condition improved but little, and an attack of bronchitis caused a further embarrassment of the overtaxed and failing heart; it was decided to open the pericardium.

Mr. Gwynne Williams carried out the operation under regional anaesthesia on May 13th. Over three pints were withdrawn of an opaque dark brown fluid of a scintillating gold paint appearance. Laboratory examination showed the presence of large quantities of cholesterol crystals; no bacteria were found.

The cardiac condition rapidly improved, and the patient was discharged early in June, free from symptoms. The last x-ray photograph shows a slight diminution in the area of opacity, and a dense area has developed over the right base.

A PRELIMINARY NOTE ON THE TREATMENT OF INOPERABLE CARCINOMA WITH SELENIUM.

BY

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FOLLOWING the work of Wassermann and Keyser¹ on the treatment of mouse cancer with selenium and eosin, a number of observations were recorded in France and elsewhere on the Continent on the effect of injections of colloidal selenium on human patients with inoperable carcinoma. The pharmacology and low toxicity of this agent were investigated by Duhamel² in 1912. Unfortunately the earliest publication in English on the subject³ attributed a total therapeutic inefficacy to the preparation; and it may be that to this fact must be attributed the lack of notice which in England alone has been accorded to this work.

Previous Reports.

A brief summary of the more important series of observations hitherto published may be useful.

I. Cade and Girard, 8 cases; 5 c.cm. of 0.02 per cent. selenium up to twenty intramuscular injections. No untoward effects. Definite benefit in 5 cases.

II. Bougeant and Galliot, 12 cases; 5 c.cm. of 0.02 per cent. selenium in serum up to (in one case) fifty intravenous injections. Benefit in all cases.

III. A. Blumenthal, 6 cases; 5 c.cm. of 0.02 per cent. selenium up to ten intravenous injections. One case died from sloughing carcinoma of uterus; one not reported; two completely relieved of symptoms; two benefited.

IV. Trinklér, 4 cases; 5 c.cm. of 0.02 per cent. selenium up to eight subcutaneous injections. Some pain. All improved.

V. Touche, 27 cases; 5 c.cm. of 0.02 per cent. selenium; three weekly intramuscular injections, repeated if required. In one case possibly accelerated death (from hemiplegia); seven cases gave negative results; three slightly improved; twelve markedly improved; one showed no macroscopic trace after death. In three the disease appeared to be arrested.

VI. Hope,⁴ 2 cases; 3 c.cm. of 0.02 per cent. selenium thrice weekly up to five doses close to growth. Both improved.

VII. Carles and Vieron, 10 cases; 2 to 5 c.cm. of 0.02 per cent. selenium up to thirty intramuscular injections. Six cases improved.

Personal Observations.

Recently, when I wished to try the effect of copper on a patient with inoperable carcinoma of the stomach, Mr. T. P. Legg, C.M.G., M.S., under whose care the patient was, was good enough to suggest treatment with selenium. Since then, by the kindness of several surgeons, I have been able, at King's College Hospital and at the Throat Department of Bristol Royal Infirmary, to observe the effect on 24 cases. It is as yet too early to pronounce finally on the value of this agent. But pending the completion of treatment in certain of these cases it may be of interest to record the results, in a general way, of my observations as far as they go.

Selenium as available for injection is a "protected" colloidal suspension of erythro-selenium beta, prepared chemically or electrically, and is a dichroic coral-red fluid. It appears not to be very stable; in old preparations the metal is found to be precipitated. It is isotonized, if this has not already been done, before injection, by the addition of sodium chloride solution. I have been careful to record the strength of "solution" used, as there are at least three strengths on the market. I inject a dose representing 0.0005 to 0.005 gram of the metal, preferably intravenously. Intramuscularly it is painless, and this may