

position of the spine. A to A indicates the new pylorus, the arrows point out the direction of the food stream. The dotted line along the duodenum from Vater's ampulla to the jejunal opening, c to c', shows the course of the secretions from the pancreas and liver to join the food stream issuing from the stomach.

The patient can lie in a recumbent position a few hours after the operation, and need not be propped up, hence there is less strain on the abdominal stitches. He is fed with tablespoonfuls of water for a day, and then peptonised milk in the usual way for a few days, and in eight days is taking a fair amount of light food. On the twelfth day he gets 2 or 3 gr. calomel; prior to that his bowels are opened by rectal injections if required. He should lie on his back for the first three weeks, and leave hospital on the twenty-fourth or twenty-eighth day. The operation has never taken me longer than 1 hour 15 minutes in an uncomplicated case. I have never had a case of jejunal ulcer afterwards.

Results.

The results are uniformly good, and the patients are not only well, but very well. They put on weight. They develop a great capacity for swallowing large quantities of liquids without discomfort. I may mention that three of my cases—two men and one woman—undertook a journey of some 1200 miles by sea within a few months after the operation, and although all three had previously been great sufferers from sea-sickness, yet they reported to me afterwards that they were not seasick and enjoyed their meals heartily all through the voyage, although it was winter time and the sea was very rough.

Notes of a case done a year ago.—Mr. —, aged 30, height 5 ft. 10½ in., was operated on by me at St. Thomas's Nursing Home on Dec. 1st. 1918. He was admitted to the hospital on Nov. 16th, 1918, suffering from profound anæmia due to loss of blood for the past 12 years from a duodenal ulcer. He was so pale and bloodless that he had to be kept 15 days on special diet and have intravenous saline injections before he was fit for operation. His weight then was 8½ st. The operation, in which Mr. O. H. Hyman assisted me, took exactly 1 hour and 15 minutes. Three weeks after the operation the patient left the hospital, and in six months' time he had put on over 1½ st. in weight. He went back to work in April, 1919, and has been at work ever since, and has not the slightest sign of indigestion or any pain or inconvenience of any kind; his cheeks are a healthy red colour.

With regard to my experience of this operation I may say that during the last nine years I have carried it out in the way I have described in every case—as a routine practice. So convinced am I of its excellence that I adopt it in cases of perforation, either at the same sitting, or, where the patient was too weak, by opening the abdomen again in four weeks' time, and leaving meanwhile a good 7-in. loop of proximal jejunum for me to find when I make the second anastomosis.

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THE LATE DR. E. L. DUNN.—Edwin Lindsay Dunn, medical superintendent of the Berkshire County Asylum, who died at Wallingford on Jan. 12th, was an exhibitioner of Trinity College, Dublin, graduating in 1887 as B.A., M.B., B.Ch. He had held resident posts at the Liverpool Dispensary and the Liverpool Infirmary for Children before becoming assistant medical officer at the Wakefield Asylum, from which he went on to Wallingford.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MEDIASTINAL TUMOUR ASSOCIATED WITH ACUTE LEUKÆMIA.

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THE association of mediastinal tumours of malignant appearance with the presence in the blood of enormous numbers of large mononuclear cells is of sufficient rarity to warrant the following brief note.

Corporal —, aged 29 years, served continuously from August, 1914, and was quite healthy until April, 1919. He went sick to a C.C.S. in Belgium on May 31st, 1919, with history of pain and discomfort in the epigastrium shortly after food and occasional vomiting, which had been going on for about six weeks. Temperature was normal during the day, but rose to 99° F. in the evening. On June 20th he developed sudden swelling of the left arm due to thrombosis. On the 27th he came under our notice. He then complained of pain in the epigastrium, which became worse at night, but did not seem to have any definite relation to food. Examination of the abdomen revealed nothing except slight tenderness below the ensiform cartilage. As to the respiratory system, there were no subjective symptoms, but percussion revealed an area of intense dullness in the middle line, from the clavicle to the heart, and liver dullness, extending 2 inches to the right and 1 inch to the left of the sternum. No dullness could be made out posteriorly. X ray examination showed an opaque mass, which did not pulsate and did not move with respiration, behind the sternum, conforming with this area. The spleen and lymphatic glands were not enlarged.

A blood count showed: Red cells, 5,600,000 per c.mm.; total leucocytes, 86,000 per c.mm. The films showed among the leucocytes an enormous preponderance of cells, 10 to 15μ, having a single large pale-staining nucleus, round, oval, or indented. The oxidase reaction was not tried, but they appeared to be non-granular myelocytes. The differential count showed: Polymorph. neutrophils, 3 per cent.; polymorph. eosinophils, 0.5 per cent.; large mononuclear cells, 96.0 per cent.; neutrophil myelocytes, 0.5 per cent. Small lymphocytes were scanty, and a few normoblasts were seen. The patient sank gradually, dyspnoea and cyanosis appeared, and he died on July 22nd. On the day before his death a blood count showed: Red cells, 4,100,000 per c.mm.; total leucocytes, 210,000 per c.mm.

Post-mortem Findings.

At autopsy a large mass, white and very tough, about the size of a coconut, was found in the mediastinum, spreading down over the heart and enveloping the borders of the lungs in such fashion as to resemble on section greatly thickened pleuræ. Behind and laterally the mass had infiltrated the lungs and bronchial glands, the latter being in places recognisable by the unaided eye only by the arrangement of black pigment. There were no metastases. Microscopically, the tumour mass showed (Fig. 1) cells resembling the leukæmic cells of the blood supported by a stroma which was in places dense and hyaline. The edges showed a looser and more cellular texture of leukæmic cells with a free capillary supply. Wherever examined the growth passed by infiltration into the

adjacent tissue, as is seen in Fig. 2, the section being made where the visceral pericardium is replaced by a sheet of growth $\frac{1}{2}$ to $\frac{3}{4}$ of an inch thick, the free surface of which is lined by a layer of flattened cells, while the cells of the other passed freely between the muscle fibres of the heart wall. A similar condition is present where the sheet of tissue invades the lungs and pleuræ. No evidence was found of thymic tissue. The spleen was but little enlarged, showing (microscopically) leukæmic infiltration; the Malpighian bodies and their germ centres were very clearly marked. The liver showed some

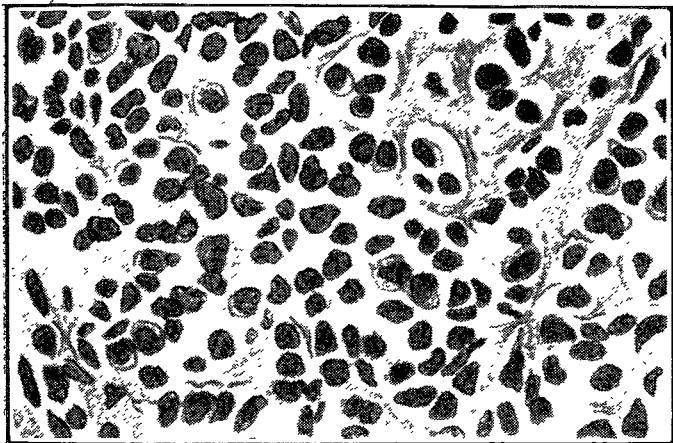


FIG. 1.—Section of mediastinal tumour.

infiltration, while the kidneys were almost unaffected. The abdominal glands were only very slightly enlarged, as were the axillary, cervical, and inguinal; microscopically, there was leukæmic infiltration, but the general structure of the glands was unaltered. The bone marrow of the sternum showed masses of the leukæmic cells, together with megacaryocytes, myelocytes, and erythroblasts.

Remarks.

This association of mediastinal tumour and escape of cells into the blood stream is of considerable rarity and of great interest on account of the possible connexion between the leukæmias, lymphadenomata, and lymphosarcomata. Sternberg held that there were two distinct conditions:

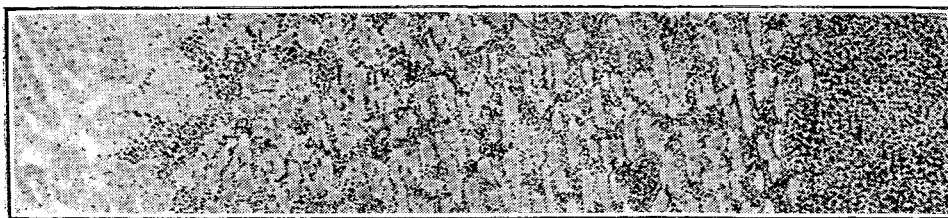


FIG. 2.—Section showing infiltration of heart wall.

(1) Increase of cells of the small lymphocyte type with hypertrophy of the lymphatic apparatus and infiltration of the various organs—that is, lymphatic leukæmia; and (2) mediastinal leukosarcomatosis as described above. Fraenkel, on the other hand, thought that (2) was simply a leukæmia tending to form tumour-like masses of cells having the appearance of malignant growths. The situation of the growth suggests association with the thymus, and appearances have been described in similar cases which resemble Hassal's corpuscles. In this connexion it may be mentioned that Gamgee has described a lymphosarcoma of the thymus with no increase of white cells in the blood, while Lochte mentions two cases of enlarged thymus "epithelioid transformation" associated with acute lymphatic leukæmia.

The case described above presents one very remarkable feature, the high proportion of red cells

right up to the time of death. For comparison, counts of other cases are given:—

(1)	Red cells:	1,500,000 per c.mm.	leucos:	176,000.	(Parkes Weber.)
(2)	"	"	"	103,125.	(O'Kelly.)
(3)	"	"	"	295,000.	(St. Bart.'s Mus.)
(4)	"	"	"	60,000.	(Mager.)
(5)	"	"	"	810,000.	"
(6)	"	"	"	210,000—case described here.	"

In conclusion we wish to express our thanks to Majors W. Essex Wynter and A. F. Voelcker, R.A.M.C. (T.F.), for their kind assistance.

A NOTE ON THE "NEW GAS AND ETHER."

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By "gas and ether" is usually meant, since the day of Clover, its inventor, a method of anæsthesia in which nitrous oxide plays a merely preliminary part in the induction, the maintenance of anæsthesia being entirely supported by ether. By "new gas and ether" I mean a method in which nitrous oxide is relied on throughout, and ether plays the supplementary part. The one is continuous ether with preliminary gas, the other continuous gas with occasional ether. It is a system which is widely applicable, gives good results, and requires only comparatively simple apparatus, for which reasons I venture to draw attention to it, although, no doubt, other anæsthetists have, like myself, been in the habit of using "gas and ether" apparatus in this way for years. I do not, however, remember having seen it definitely described.

The apparatus necessary is merely a Clover's inhaler, preferably the wide-bore modification, and attached to it an ordinary 2 gallon bag with Hewitt's stopcock, connected with gas cylinders. With a small prop between the teeth, and the head turned well to one side, the face-piece is accurately fitted to the face while the bag is about two-thirds distended. The induction is now carried out as ordinarily with "gas and ether." That is to say, unconsciousness is secured with gas only, an ounce and a half of ether then put into the chamber, the expiratory valve shut, and the indicator fairly rapidly advanced till at the end of about four minutes there is stertor and full narcosis.

From now onwards, instead of getting rid of the "gas," as in the old method, the aim is to use it all the time and the ether as little as possible. The procedure is as follows:—

If the patient is a muscular man or in any way what is called a difficult subject let the indicator be advanced quite to "full" in the course of the induction. When anæsthesia is present turn the indicator rapidly back to "0." The patient is now re-breathing a mixture of N_2O , E , and expired air with CO_2 . Open the expiratory valve, thus emptying the bag, and at once fill it two-thirds full again with N_2O , which you allow to be re-breathed. Give breaths of air by means of the stopcock as often as it is necessary to do so to keep the colour free from all blueness. Empty the bag, by opening the expiratory valve, about every five minutes. Any indication that the narcosis is too light is met by advancing the indicator and admitting a little ether.

By this simple method a great many patients can be kept satisfactorily anæsthetised by an inhalation which is for the most part one of nitrous oxide. Consequently they are saved from the after-effects, which are the drawback to ether. At the same time they have the pleasant and quick induction