whether these necrotic foci are really due to a mixed infection with the tubercle bacillus, or whether there is in lymphadenoma a type of "caseation" similar in certain aspects but differing in others. This latter view is of importance since, if this is so, the analogy with other infective granulomata like syphilis, tubercle, and actinomycosis becomes more striking, for in all these conditions we have alteration of the normal structures by endothelial and lymphoid tissue with the presence of giant cells, followed later on by "caseation" and by sclerosis.

The following case of coexistent Hodgkin's disease and tuberculosis is of interest since these necrotic foci were present in the glands.

A man, aged 30, was admitted under the care of one of us in the General Hospital, Madras, on August 28th, 1927, with a history of enlargement of the glands in the neck, pectoral region, and axilla of five months' duration. He was sent to the surgical ward for excision of a gland for pathological report. The report was "lymphadenoma," and the patient was subsequently re-admitted to the medical wards on September 11th. He was then complaining of difficulty in swallowing, possibly from pressure of the glands in the neck. The glands in the parotid region were also enlarged. There was, however, no dyspnoea, loss of voice, or enlargement of the superficial veins, or any feature suggestive of a mediastinal growth. The chest was, however, asymmetrical and there was slight fullness in the second and third interspaces on the left side. From the first a dullness on percussion of both sides of the chest was noticed and on auscultation a few rales could be heard. The heart showed a slight softening of the first sound in the aortic and pulmonary areas. Throughout his stay in hospital there was a remittent pyrexia, with, however, no periods of apyrexia. Puncture fluid from one of the glands showed marked eosinophilia. The Wassermann reaction was negative.

The blood on admission showed 1,720,000 red blood cells per c.mm., 58,000 white corpuscles, haemoglobin 56 per cent. The differential count revealed polymorphonuclears 88 per cent.; lymphocytes 8 per cent., myelocytes 3 per cent., eosinophils 1 per cent. The second examination of the blood showed 3,748,000 red blood cells, 56,250 white corpuscles; with polymorphonuclears forming 86 per cent., myelocytes 3 per cent., lymphocytes 9 per cent., and eosinophils 1 per cent. Poikilocytosis was a well-marked feature. Biochemical investigations indicated a blood calcium figure of 8.6 mg. in 100 c.cm., and blood fragility was complete in 0.4 per cent. of saline; van den Bergh's test gave a direct negative and an indirect weak positive reaction. The blood pressure was 110 mm. systolic and 70 mm. diastolic. The patient was submitted to a course of deep x-ray therapy, under which the leucocyte count came down to 7,800, and the haemoglobin to 42 per cent. The patient died after a fit on September 13th.

The necropsy showed marked enlargement of the anterior and posterior chains of the glands in the neck. There was a swelling in the middle line of the neck, which on incision was found to be an abscess of the size of an orange, with a well-defined wall; it contained yellow pus. There were a number of smaller glands in the axilla, which were discrete and slightly movable; a group of glands could be felt also in the groin. Obliterating pleural adhesions were present on the right side, while in the left pleural cavity there was an empyema pushing down the diaphragm and causing a pressure collapse of the base of the left lung, which was adherent above, completely shutting off the empyema. There was some oedema of the tissues of the superior mediastinum. A lump of matted glands formed a large swelling surrounding the bronchi and the aortic arch, filling up the shoulder girdle, and extending behind the heart. There was no infiltration of the pericardium. The left lung was oedematous at the apex, the base was collapsed; the pleura was thickened and adherent, shutting off the empyema. The tracheo-bronchial glands were enlarged and pigmented; they showed foci of caseation. The right lung showed pleural tubercles near the hilum suggestive of lymphatic spread. Microscopically, thickening of the pleura was found, and miliary tubercles were seen. The heart showed brown atrophy. In the liver there were a few miliary tubercles, underneath the capsule as well as inside the organ; there was also acute congestion. The spleen was not enlarged, but was smaller than normal; there were white opaque areas of variable size which, on microscopical examination, proved to be caseating and conglomerate tubercles, with well-developed giant cell systems and commencing caseation. There was marked fibrosis. Both kidneys contained pyaemic abscesses and a few retention cysts. The other organs were healthy, except that the peri-pancreatic glands were enlarged. The periosteum of the right clavicle was infiltrated, and the marrow of the bone itself was involved.

The glands on section presented those curious yellowish-white opaque flecks which resembled tuberculous caseous material, but were rather more firm, more opaque, and discrete; they stood out prominently from the surrounding tissue. Some glands showed a number of these tiny opaque flecks which were not fused together like tuberculous caseous material. Other glands showed marked enlargement, and on section no necrotic areas were found, but there were typical gelatinous areas with strands of fibrous tissue running into the gland from the capsule. There was some peradenitis in the intrathoracic group, but very little in the smaller glands.

Microscopically the glands that were uniformly enlarged showed well-marked fibrous transformation; here and there a few groups of lymphoid cells were seen, but the differentiation of the gland into lymph sinuses and follicles was entirely lost. There was, however, no diffuse endotheliosis, but well-marked fibrosis of the

sclerosing type, with fully formed fibrous tissue. The lymphoid accumulations between these strands were found to be composed of a few endothelial cells, with rather pale large nuclei arranged in a cluster in the centre, so that the protoplasm formed only a scanty rim round them—a picture which Andrewes has defined as quite distinct from that of tuberculous lymphadenitis. The nuclei were mostly oval, with a ring of distinct nuclear membrane, and one or two dark chromatin nodes. Eosinophils were very scanty in the sclerosed glands, but numerous in the soft ones. The lymphoid cells were of the large and small lymphocytic type.

The presence of myelocytes in the blood is interesting and unusual. It will be remembered that the earlier authors have described cases of lymphadenoma with a myelocytic blood picture, and Cohnheim first applied to it the term "pseudo-leukaemia," assuming that it was a form in which the leukaemic blood picture was absent. Rolleston holds that the presence of leukaemic blood changes would now, with our modern accuracy of haematological methods, rule out a diagnosis of Hodgkin's disease. But in this undoubted case of Hodgkin's disease the presence of a few myelocytes indicates response of the bone marrow, showing that the process is not very far removed from a real leukaemic hyperplasia. It may be added that Fabian has recorded a few myelocytes in cases of Hodgkin's disease, but they were too few to estimate. The presence of myelocytes may indicate involvement of the bone marrow, since undoubted involvement of the clavicle was found in the case mentioned above.

The hyperleucocytosis of 56 per cent. is evidently a reaction to sepsis from the empyema and abscess in the gland. The polynuclear leucocytosis of Hodgkin's disease is both absolute and relative, but the counts seldom exceed 20,000.

The occurrence of an abscess in one of the glands in the neck is unusual, and raises the question whether these necrotic foci are the starting point of the abscesses. This, again, may suggest the view that lymphadenoma is a secondary infection—a view which is emphasized by Horder—an infection supervening on some previous chronic lymphadenitis.

With regard to the eosinophilia, Longcope holds that it is most common where there are necroses in the glands. Bunting, on the other hand, contends that eosinophils are low in the blood in the active stages of the disease, seeing that they all emigrate into the lymphatic glands, the destruction of the lymphocytes there apparently serving as a stimulus. In this case it is noticeable that necrosis in the glands was well marked, but the eosinophilia was slight.

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OBSERVATIONS ON TWENTY-THREE CASES OF
CARCINOMA OF THE BLADDER
TREATED BY RADIUM.

BY

A. CLIFFORD MORSON, O.B.E., F.R.C.S.,
SURGEON TO ST. PETER'S HOSPITAL FOR URINARY DISEASES.

THE consensus of opinion on the Continent appears to be that malignant disease of the genito-urinary organs, apart from the penis, reacts unfavourably to radium treatment. In the majority of cases the method of surface application has been adopted in preference to what is termed the surgery of access.

Research on the treatment of bladder carcinoma by buried radium needles has been carried out by me at St. Peter's Hospital since 1925. Twenty-three cases of inoperable carcinoma have been so treated during this period, and kept under careful observation.

The figures which are given in this short communication might produce a misleading impression of the value of irradiation without a study of the clinical aspects of each case both before and after treatment. So ill were some of the patients when first examined that death appeared

imminent. In two cases blood transfusion had to be resorted to in order that the patients might be kept alive during the operation of suprapubic cystotomy. The bladder haemorrhage was controlled within a few hours of the onset of the radium exposure.

It is necessary to stress the point that all the twenty-three patients, before treatment was commenced, were profoundly ill from either sepsis or profuse haemorrhage.

Three of these patients died in hospital within one month of irradiation. The remainder, twenty, were discharged from hospital in fair health, with their suprapubic wounds firmly healed, at periods ranging from three to five weeks.

One patient survived three years, and one two years.

Two patients treated in 1927 are alive, one of whom shows no recurrence of the growth, the other writing to say he is in poor health. A third patient is dead.

The remaining fifteen cases have been treated during the year 1928. Five have died since discharge from hospital. Ten are in fair health, and continue under observation.

In all cases of carcinoma of the bladder haemorrhage can be controlled by irradiation. In the presence of severe cystitis the prognosis is always bad.

The suprapubic wounds, without exception, have healed rapidly. In those cases where sepsis has been absent both general and local conditions have improved for about six months after irradiation. Improvement after this period has not been maintained apart from one or two exceptional cases.

One case of carcinoma of the female urethra invading the bladder, treated twelve months ago, remains a clinical cure. Previous to treatment there was complete incontinence of urine. Micturition is now normal.

The radium technique which has been adopted is as follows.

First a suprapubic cystotomy is performed, and the extent of the growth determined by palpation. Five milligrams of the element, in platinum tubes 25 mm. in length and with a screenage of 0.5 mm., are then inserted 2 cm. apart into the periphery of the tumour on its mucous surface, and also on its external aspect. The tubes remain in position for twelve to twenty-four hours. Each tube is threaded with silk-worm-gut, and at the termination of the period of exposure is easily withdrawn from the bladder through the suprapubic wound. The silk-worm-gut is used in preference to silk on account of its strength, and less likelihood of being torn when pulled on.

The fact that improvement, both in the general state of health and also in the local condition, occurred, in practically all the cases is encouraging. Increase in weight in every patient was noted for six months after the radium exposure.

OVARIOTOMY FOR UNUSUALLY LARGE OVARIAN CYST IN A WOMAN OF 73: RECOVERY.

BY

WILLIAM EVERETT, M.B., F.R.C.S.ED.,

CARDIFF.

ATTENTION was drawn to the comparative rarity of the operation of ovariectomy in women over 70 years of age by Leslie Williams (see the *British Medical Journal* of April 13th, page 679), who cites two personal cases, bringing the total of recorded cases up to 155.

Very large ovarian cysts are not now often met with, for the simple reason that surgical facilities exist to-day for their removal before they attain to the size pictured in the textbooks of a generation ago. Now and again a case appears where the patient has been content to put up with things and live with her cyst, undismayed by its increasing size, even although advice for its surgical removal has been given. The following case is therefore recorded both on account of the rarity already mentioned and also because of the unusual size of the ovarian cyst removed.

The patient, who was 73 years of age, was seen by me on October 27th, 1927, in consultation with her family doctor, with a view to advising upon operation for an enormous swelling of the abdomen, thought to be caused by an ovarian cyst.

The patient was a woman of small stature, very cheerful and intelligent. She had had several children, and the menopause had occurred when she was about 50 years of age. When she was 65 she became conscious of her abdomen enlarging, but had decided not to worry about this misfortune until, eight

years later, when she was 73, the swelling of the abdomen had become so great as to interfere seriously with her breathing and getting about. She then complained of abdominal and sciatic pains, fatigue and breathlessness upon exertion, palpitation, sleeplessness, constipation, and inability to hold her water.

She was lying upon her side in bed when I saw her, and when she lay upon her back she was unable to see the top of the bedrail at the foot of her bed. She was a little cyanotic, with dilated venules about the nose, was troubled with slight bronchitis, and had a small degree of oedema round the ankles. Her heart action was arrhythmic and the sounds were feeble, although the valves were competent.

Examination of the abdomen revealed an enormous dull swelling rising from the pelvis and filling the whole abdomen as far as the xiphisternum, with changing areas of resonance to percussion on either flank. The fluid thrill was easily elicited. A diagnosis of large ovarian cyst was made, and preliminary puncture and drainage was advised, to be followed at a later date by ovariectomy.

Paracentesis was performed on October 29th, 1927. On this date an area midway between the umbilicus—which was protruded—and the pubic symphysis was anaesthetized with 1 per cent. novocain, and the cyst punctured by a large trocar and cannula. A long rubber tube was then attached to the cannula and led beneath the bed into a 10-gallon zinc wash-bath, and the fluid contents, which resembled pea-soup, were thus slowly removed. The joy of the old lady increased as her abdomen diminished, and her happiness seemed complete when she raised her head and saw her toes! It was considered best to withdraw the cannula without pressing upon the cyst, in view of possible leakage when the flow had almost ceased. The 10-gallon bath was approximately half full, and upon later measurement the amount of fluid totalled nearly 40 pints.

Two weeks later she came into a nursing home, and on November 17th was operated upon for the removal of the sac. Ovariectomy was performed under chloroform and ether, attempts to introduce the needle for spinal anaesthesia having failed. Slight adhesions were encountered, but after bringing the cyst to the surface of the wound and withdrawing about ten pints of fluid which had again collected, the huge sac slipped out of the abdomen with gentle traction. Blood vessels the size of adult fingers spread over its surface from the pedicle, which was situated upon the right side. The pedicle was securely ligated and the cyst removed, the operation giving rise to no difficulty and being completed in twenty-five minutes.

The specimen was an ovarian cystadenoma, with smooth, tough, and evenly thick walls about three-eighths of an inch thick, except at the base, where there were septal remains.

The patient made an uninterrupted recovery, and left the nursing home at the end of twenty-one days, and now, at 75, enjoys very good health.

I regret that a photograph was not taken before operation, and that the weight of the cyst and its contents was not ascertained by recording the weight of the patient before paracentesis and after ovariectomy.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TWO CASES OF OVARIOTOMY IN WOMEN AGED 84 AND 77 RESPECTIVELY.

IN view of the article by Mr. Leslie Williams in the *Journal* of April 13th, I should like to record the following two cases.

CASE I.

Mrs. X., aged 84, a patient of Dr. Mitchell of Guildford, was, on May 1st, 1918, operated on for a large ovarian cyst, the size of a full-term pregnancy. The tumour was a huge, simple cyst of the right ovary, and was removed entire without previous tapping. The patient made an uninterrupted recovery and has remained well ever since. She is now 95 years of age and in good health.

CASE II.

Miss Y., aged 77, was a patient of Dr. Cliff-Hodges of Godalming. She was a very frail old lady, crouched, and bent in her bed, and was toothless except for two old stumps. She had been an invalid for years, but had lately suffered from intestinal obstruction, which at the time of my visit had been partially relieved by enemata, and the vomiting had ceased. Her temperature was 100°, and her pulse was rapid and feeble. The abdomen was filled with a huge, irregular, tender solid tumour, which had recently been wedged into the pelvis; but Dr. Cliff-Hodges had partially dislodged it and thus to some extent relieved