The cases treated in this manner have, without exception, done remarkably well. In none of them has the wound broken down, and in all of them the convalescence has been considerably shortened. Frequently the wound is soundly healed, all discharge has ceased, and the patient is out of hospital on the tenth or eleventh day. Compared with the old laborious daily packing, which often had to be done for anything up to two months, it is an advance of the greatest importance.

INOPERABLE CARCINOMA OF CERVIX TREATED BY RADIUM TRANSPERITONEALLY.

A REPORT OF THREE CASES.

BY

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THE following record of three cases of carcinoma of the cervix treated by radium intravaginally and transperitoneally is based on the notes published in the annual Harker Smith radium report of University College Hospital, and for permission to use this report I am indebted to the hospital Radium Committee. The patients concerned were all under the care of Sir George Blacker, who operated in each case.

CASE I.

The patient, A. B., aged 49, was admitted on April 21st, 1925, with a moderately advanced cervical carcinoma infiltrating the anterior vaginal wall. Microscopical examination showed the growth to be squamous carcinoma.

On April 24th the abdomen was opened, and four tubes, each containing 10 mg. of radium sulphate, screened by 0.3 mm. of platinum, were embedded in the left utero-sacral fold, in the base of the left broad ligament, higher up and further out in the left broad ligament, and in the base of the right broad ligament respectively. Each tube was tethered by phosphor-bronze wire, the distal ends of the four wires being brought out of the wound through a rubber drainage tube. At the end of ten hours the four needles were extracted by traction on the wires, the drainage tube was removed, and the hole closed by tying a through-and-through suture which had been placed in position at the time of the operation.

On May 6th, the wound having healed by primary union, and the patient having made a good recovery from the effects of the operation, 100 mg. of radium sulphate were inserted in the cervical canal, and 100 mg. placed transversely across the vaginal vault, each being screened by 0.5 mm. of platinum and 2 mm. of rubber. The radium salt was left *in situ* for twenty hours, making a total application of 2,800 milligram hours of element.*

On July 10th the patient was readmitted to hospital; she had been well, gained 4 lb. in weight, and had a good appetite. There was no bleeding, but a slight yellowish discharge. Her bowels were regular. The cervix had been replaced by a depressed area about the size of a sixpenny piece, consisting of red granular tissue which bled on examination. Radium treatment was administered as follows: one tube containing 50 mg. of radium sulphate, screened with 0.5 mm. of platinum and 2 mm. of rubber, was placed into the cervical canal; one tube containing 100 mg. of radium sulphate, similarly screened, was placed transversely across the vaginal vault. The tubes were kept *in situ* for twenty-four hours, involving the application of 2,520 milligram hours of element.

On September 22nd the patient was once more admitted to hospital; she was very well, had a good appetite, had increased in weight, there was no bleeding, and very little discharge. Hot flushes were troublesome. On examination the vagina was found to be shortened and its upper part conical. The vaginal cervix had disappeared and the uterus was fairly mobile; both utero-sacral ligaments were palpable but not thickened or shortened. The abdominal scar was sound; there was no evidence of growth on inspection or palpation.

In November, 1927, the patient complained of pain in the leg and arm; x-ray examination showed the presence of osteoarthritis. No evidence of growth was found on vaginal examination; on rectal examination both utero-sacral ligaments were found to be indurated, though no definite mass was palpable. The mucous membrane of the rectum felt normal, and the fact that the patient was passing clots of blood with her motions was attributed to the possible presence of a radium burn of the rectum.

* To convert radium sulphate to element it is necessary to multiply by the coefficient 0.7.

In May, 1928, nothing abnormal was found on abdominal examination, but the vagina was occluded by adhesive vaginitis. The utero-sacral folds were slightly thickened, but there was no clinical evidence of growth. In March, 1929—nearly four years after the beginning of treatment—the patient was alive and well.

CASE II.

The patient, A. C., aged 52, was admitted on September 7th, 1925, complaining that for four months she had had a watery, and occasionally blood-stained, discharge from the vagina. She had no pain and the bowel and bladder functions were normal. She had had three children (no miscarriages), the last pregnancy having occurred eleven years and the menopause two years before the onset of symptoms. On examination the cervix was found to be enlarged and torn on the left side; posteriorly it was partially destroyed by a friable growth which bled readily. The vagina was not actually invaded, but the cellular tissue on the left side was somewhat thickened and the uterus slightly fixed. Microscopical examination showed the growth to be a squamous carcinoma.

On September 11th, and again on September 14th, acetone was applied for ten minutes, and an operation was performed on September 16th. The original intention was to carry out Wertheim's extended hysterectomy, but this idea was abandoned when it was found that the growth had invaded the peritoneum from the right posterior part of the cervix, causing partial obliteration of the pouch of Douglas, and was just beginning to invade the rectum. Furthermore, the uterus was tethered on the right side by a definite invasion of the broad ligament. The ovarian vessels and round ligaments were tied and, by a technique similar to that used in Case I, five tubes, each of 10 mg. of radium sulphate, screened by 0.3 mm. of platinum, were embedded as follows: one tube in the near end of the base of the right broad ligament; one tube further out between the right broad and utero-sacral ligaments; one tube in the mid-line of the cervix just below the internal os; one tube behind the cervix, half an inch to the left of the mid-line; one tube in the base of the left broad ligament. The tubes were allowed to remain in position for ten hours, the total dose being 350 milligram hours of element. After the operation the patient had an uneventful convalescence, and on October 2nd, and again on October 6th, acetone was applied.

On October 9th radium treatment was resumed. A tube containing 100 mg. of radium sulphate, screened with 0.5 mm. of platinum and 2 mm. of rubber, was placed in the cervical canal, and one containing 50 mg. of radium sulphate, similarly screened, in the right posterior fornix. Both tubes were retained for thirty hours, giving a total dose of 3,150 milligram hours of element.

On June 9th, 1926, there was an extensive papillary recurrence projecting from the cervix; the mass was breaking down, was friable, and it bled on manipulation. The lateral fornices were not involved; the left utero-sacral ligament was normal; but there was marked thickening in the right utero-sacral ligament. An application of 3,100 milligram hours of element was made per vaginam. On July 13th the cervix was largely atrophied and no cervical growth could be detected. The posterior fornix was obliterated, the cellular tissue on the left side was normal, but there was a definite mass in the right utero-sacral ligament.

On November 14th the only abnormal physical sign revealed by abdominal examination was an enlarged and readily palpable right kidney. The cervix was atrophied and flush with the vaginal vault, and there was induration in the right fornix. Rectal examination revealed a large, hard, fixed mass on the right side of the pelvic wall; it was not attached to the rectal mucous membrane. Both utero-sacral ligaments, especially the right, were infiltrated and fixed to the pelvic wall. On November 18th similar conditions were found, and in December, 1928, three years after the beginning of treatment, the patient died.

CASE III.

The patient, F. O., aged 53, was admitted on October 28th, 1925. Examination revealed an ulcer with a thick everted edge and a friable surface, which bled readily on manipulation, replacing the cervix. The uterus was fairly mobile. The left broad and utero-sacral ligaments were to some extent invaded, not the right. There was early extension to the vagina.

On October 30th a tube of radium sulphate, screened with 0.5 mm. of platinum and 2 mm. of rubber, was inserted into the cervical canal, and one of radium sulphate, similarly screened, into the posterior fornix. The tubes were retained for twenty-four hours, giving a total dose of 2,520 milligram hours of element.

On November 13th the abdomen was opened, but the conditions were found unsuitable for treatment by Wertheim's operation. With a technique similar to that used in Case I, five tubes, each of 10 mg. of radium sulphate, screened by 0.3 mm. of platinum, were embedded as follows: three tubes behind the cervix, one median, and one at the extreme lateral margin of each side, a tube in the left utero-sacral fold $\frac{1}{2}$ inches from the

cervix, and another 1 inch from the cervix. All five tubes were removed at the end of ten hours, making a total application of 350 milligram hours of element.

A section taken for examination was of interest, for though in many places it showed ordinary squamous carcinoma, in several areas the cervical glands were normal, and columnar epithelium of some of these appeared to merge into the squamous growth. The suggested explanation was that trabeculae of the squamous carcinoma had tended to grow down the cervical glands and gradually to replace the normal epithelium; such trabeculae had in consequence obtained a central lumen.

After the operation the patient's progress was unevenful. On February 2nd, 1926, examination showed that the upper end of the vagina was scarred and the cervix somewhat enlarged; the mucosa was intact. There was a diffuse thickening of the cellular tissue on the left side of the pelvis, due either to the presence of growth or to fibrosis. An application of 1,256 milligram hours of radium sulphate was made per vaginam. On August 24th, 1926, examination showed the presence of a hard fixed mass in the pouch of Douglas; the patient was given lead treatment at the Cancer Hospital, but she died shortly after, having survived fifteen months since the beginning of treatment.

SUMMARY.

Case i was alive and clinically free from disease four years after treatment; Case ii died three years, and Case iii fifteen months, after treatment. Curiously enough, the disease in Case i was more advanced than in the other two. For purposes of comparison I may mention that at University College Hospital during the past six years 14 patients with operable cervical carcinoma were treated by radium alone, and of these 7 are dead; 7 patients are alive, 1 five and a half, 1 four and a half, 1 four, and 4 three and a half years after the first radium treatment. The average period of survival among the patients who died was twenty months.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF GLANDULAR FEVER.

THE following clinical details of a case diagnosed eventually as glandular fever seem to be worth recording.

A married woman, aged 48, on January 1st, noticed vague pains about the neck; this fact was not mentioned until later.

During the night of January 2nd she had most violent pains over the base of the right lung, and general abdominal pain. There was no sickness, the bowels were not open, and there was no abdominal rigidity; the temperature was 100° and the pulse rate 105. The breath sounds at the right base were diminished, but there was no cough. The next day her condition was much about the same, the temperature and pulse being unchanged.

On January 4th pains in the neck developed and the glands of the right side of the neck became slightly enlarged. The temperature was 100.8° and the pulse 106, morning and evening. On the next day the glands on both sides of the neck were tender and enlarged; the temperature had risen to 101° and the pulse to 110, morning and evening. During the next twenty-four hours the glands of the neck became rather smaller and slightly less tender; the temperature was 100.6° and the pulse 100.

On January 7th the glands in the neck were decreasing in size, but she complained of pains in the sternum and slight tenderness in the axilla; the glands in the groin were tender and a little enlarged. The temperature was 98.6° and pulse 100. The breath sounds at the right base still remained rather weaker than at the left. By the next day the glands in the groin were tender and enlarged; there were pains in the lumbar region, tender and slightly enlarged axillary glands, and tenderness of the epitrochlear glands. The pain over the sternum was better. The temperature was 99° and the pulse 88. On January 9th there was still slight tenderness of the glands in the groins, neck, axilla, popliteal glands, and the epitrochlear glands; the temperature was 99° and the pulse 78. There was slight cough, but the heart and lungs appeared normal, and the general condition was improving. On the following day she developed a cold, and there were signs of bronchitis. The axillary and epitrochlear glands were still tender and slightly enlarged, and there were pains in the lumbar region; the temperature was 99.4° and the pulse 88. During the next twenty-four hours the axillary glands remained tender, and there were still signs of bronchitis. The temperature was 99.2° and the pulse 80.

On January 12th she was practically clear of any pain or tenderness, but still complained of the "cold." The temperature was 98.2° and the pulse 74. Two days later the chest was clear and the "cold" better, but she still complained of vague pains in the axilla and groins. The temperature was 98.4° and the pulse 74. She was allowed to get up for a short period. On January 16th the patient felt very much better except for

general weakness. The temperature was 98° and the pulse 80. She eventually made a complete recovery, although convalescence was rather prolonged.

The case was of interest in the early stages when the diagnosis of pneumonia seemed possible, although the absence of cough was against it. Later the existence of some abdominal condition was suggested. The signs in the chest in the early stage were probably due to the enlargement and pressure of bronchial glands, and the abdominal pains would suggest that the mesenteric and retroperitoneal glands were also involved.

This was the first case I had seen, and, so far as I know, no other case had occurred in Leicestershire at that time. During this period and afterwards I was unable to discover any mild case that might be mistaken for the condition, and possibly go unrecognized.

Coalville, Leicester.

A. M. W. SEGERDAL.

DIABETIC GANGRENE OF FACE.

THIS case of diabetes, in which gangrene developed in an unusual site, was considered of sufficient interest to make a brief note accompanying a photograph.

The condition was resistant to treatment, and ran a fatal course of seven days, mercifully without severe pain.

At the time of onset the patient was receiving insulin and dietetic treatment on usual lines. The first thing noted was a hyperaemic area immediately under the right orbit, which spread, similarly to erysipelas, from that centre; the eyelids swelled up and occluded the eye, which became proptosed with orbital cellulitis. The other eye became similarly affected, while the skin changed to patchy, moist, black sloughs. A photograph, unfortunately, does not clearly show necrosed tissue. Coincident with the local condition, sugar and acetone reappeared in the urine.

I am indebted to Dr. Aveling, physician in charge of the case, for permission to publish this note, and to Miss Houghton, sister in the x-ray department, for the photograph.

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TREATMENT OF FILARIASIS BANCROFTI.

WITH the hope that this communication will be seen by practitioners living in places where cases of filariasis bancrofti occur, I am sending you some notes about a patient treated here recently with weekly injections of moogrol in 1 c.cm. doses.

A man, aged 40, had been known to me for years as a healthy, hardworking washerman. He came to my dispensary one morning and showed me a much enlarged leg, which he said he had had for two months. In his night blood I found numerous *Filaria bancrofti*, and the question then came up how to treat him. I was aware that my friends had given novarsenobenzol and numerous other drugs with only partial relief, so decided not to try any of these.

So far as I knew, no patients had been given moogrol or other drugs of the chaulmoogra group, so I decided to try it. At the end of the first week the man returned and said that he felt better; the leg did not look so tense. He has now had six injections; he is able to get back to work, and he walks much better. Measurements show that the calf is losing between one-half and one-quarter of an inch in circumference per week. The blood has not been examined again.

We see very few fresh cases of this condition here, but, for the most part, old chronic cases in which little hope can be given.

My great wish is that others may try this treatment in places where there are a greater number of cases than we have here.

Swatow, China.

C. H. BRANGWIN.