supervenes, due either to changes in the tumour itself, or to its increasing bulk, or, most rarely of all, to an acute torsion of a coil of small intestine caused by the freely dangling mass on its surface.

CASE RECORDS.

Case 1.

B. A. was admitted in 1913 for acute intestinal obstruction. A large tumour was found involving the small intestine about 18 inches below the duodeno-jejunal junction. The mass was adherent to the large bowel, but it was freed without much difficulty, and the whole mass, with the adjacent glands and about two feet of intestine, was resected. A lateral anastomosis was done. The naked-eye appearance of the specimen suggested a primary glandular condition with adhesion to and ulceration into the small intestine. A portion of the mass abutting into the lumen showed histological structure of a sarcoma with an extraordinary infiltration of eosinophil cells.

The patient was quite well for eleven years. In 1925 she was again admitted for colic, abdominal pain, and vomiting of several months' duration. At operation an annular cuff-like growth was found high up in the small intestine. This was resected, together with the adjacent glands. Histologically it showed a sarcomatous structure identical with the tumour removed in 1913. In 1928 the patient reported herself quite well.

Case 2.

The patient complained of general abdominal colic, nausea, irregular constipation and diarrhoea, and abdominal distension for about six weeks. At operation a mass resembling a sloughing cyst was found attached to the small intestine about one foot from the duodeno-jejunal junction. A wide resection and a lateral

anastomosis was performed. Histologically the mass proved to be a spindle-celled sarcoma. One year after the operation the patient reported himself as quite well.

Case 3.

This patient was admitted on account of acute intestinal obstruction of very sudden onset. No definite antecedent illness could be ascertained apart from two attacks of diarrhoea within the last few months. When first seen his condition was very poor, but it was decided to give him the chance of laparotomy. A small intestinal tumour was seen, but all that could be done was an ileostomy.

At the post-mortem examination the small intestine distension was found to be relieved, but an early acute general peritonitis was the cause of death. About eight feet from the ileo-caecal valve a rhomboidal fleshy mass was found adherent to the small intestine. It dangled from a small base and a pedicle containing some large veins. In bulk it measured about 2 in. by 1½ in. by 1 in. Fig. 1 shows the mounted specimen. It had caused acute intestinal obstruction by bringing about torsion of the coil to which it was attached, as shown in the photograph (Fig. 2). Histologically the structure was leiomyosarcoma.

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BIBLIOGRAPHY.

- Corner and Fairbank: *Trans. Path. Soc. London*, 1905, lvi, 20.
 Telling: *Proc. Roy. Soc. Med.*, 1919-20, xiii, 152.
 Malbrand: *Thèse de Paris*, 1922.
 Douglas: *Annals of Surgery*, 1922, lxxvi, 653.
 Fullerton: *British Journal of Surgery*, 1926, xiii, 754.
 Rankin: *Annals of Surgery*, 1924, lxxx, 704.
 Speese: *Annals of Surgery*, 1914, lix, 727.
 Moynihan: *Abdominal Operations*.
 Goldstein: *American Journal of Surgery*, 1921, xxxv, 240.

EPITHELIOMA, ERYTHEMA INDURATUM (?), AND ULTRA-VIOLET RADIATION.

BY

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At the discussion on ultra-violet radiation in dermatology which took place at the Annual Meeting of the British Medical Association held in Edinburgh in July, 1927, the question was raised as to whether there was a risk of carcinoma after ultra-violet radiation comparable to that following upon excessive x-ray therapy. Some considerable time obviously would have to elapse to prove this, and more than a few isolated cases would be required to be of any positive value, as there must be few if any dermatologists who have not seen epithelioma develop on the cicatrices of lupus vulgaris where no physical agent of any description whatsoever—x rays, for instance—had been employed. Such cases are relatively infrequent, but their occurrence is generally admitted, and requires to be kept in mind when endeavouring to arrive at the cause of cicatricial malignant degeneration in any given case.

A somewhat arresting case from the point of view of malignant development occurred comparatively recently in my clinic.

About the beginning of 1926 a male adult patient, the subject of extensive facial lupus vulgaris, who had been treated by a colleague in England with ultra-violet rays, came under my care in hospital, on the latter's recommendation, for further ultra-

violet treatment. The patient was submitted to carbon arc light treatment. In the summer of that year a suspicious lesion developed on the left cheek. I discussed with a surgical colleague the possibility of malignancy, and a subsequent biopsy showed the growth to be of epitheliomatous nature. Arrangements were made for its excision, but the patient disappeared and nothing more has since been seen of him. More than once I inquired if he had been treated at any time with x rays, but invariably got a negative answer, nor can I recall any evidence whatsoever in the shape of pigmentation, telangiectases, or atrophic scarring that would suggest excessive x-ray therapy. I could do no other than conclude his statement was accurate.

Exposure to sun rays is included amongst the possible factors in the causation of epitheliomata, and the same may be said of the etiology of xeroderma pigmentosum. It would appear, however, that this factor would require the associated one of abnormal vulnerability of the skin of affected persons, otherwise these diseases would be more frequent in countries where sunshine is a constant feature, and I am not aware that such is the case. The sometimes familial character of xeroderma pigmentosum would also support this contention. Again, as previously stated, epithelioma may develop on lupus vulgaris where no physical therapeutic agents have been applied. The question naturally arises, Was this epitheliomatous development due to ultra-violet radiation or was it merely coincidental?—a problem obviously offering some difficulty of solution. It might be said, however, that the causation was at least as likely to be independent of treatment as due to it. The patient was of somewhat obstinate temperament, and the regrettable feature of the case was his disappearance—I understand he went to sea—after it had been arranged to excise the lesion.

A case equally interesting as that just recorded, from the point of view of complication, but of entirely different nature, was the following.

A girl, aged 19 years, suffering from facial and submental lupus vulgaris, came under my care in November, 1925, and was put on ultra-violet ray treatment, the carbon arc light being employed. After about four months' treatment lesions highly suggestive of erythema induratum scrofulosorum, one of which broke down, appeared on the legs. Their distribution, however, tended to be at a higher level than is usually the case in this affection. I had never practised ultra-violet radiation in erythema induratum, and as the latter had developed during that treatment

Left leg of patient with erythema induratum (?) lesions; the large one shows developing ulceration.

I discontinued it. It is my practice to submit most patients suffering from erythema induratum to x-ray therapy, employing at the same time appropriate local medication—usually a resorcin ointment and lotion—and advising, where practicable, rest in bed or on a couch in the semi-recumbent position. The patient was treated on these lines. X-ray treatment was begun in March, 1926; a half Sabouraud pastille dose screened with 0.2 aluminium, the pastille remaining unscreened and equidistant from the part exposed and the source of the rays, was given; this was repeated in a fortnight, and again in a little over three weeks—that is, a total dosage of 1½ pastilles through 0.2 aluminium filter, distributed over a period of a little more than five weeks. This was associated with an ointment and lotion, as previously quoted, and rest enjoined. Healing followed. At the margin of the healed ulcer, the sole lesion which had ulcerated, an incomplete circle of yellowish colour persisted.

Pigmentation remaining after healing is a recognized feature in erythema induratum, but the unusual tint led me to submit a specimen to the pathological

department for examination, which elicited the following report: "The specimen shows a central area with atrophic epidermis surrounded by a swollen area in which the deeper layers show slight increase of pigment granules. No evidence of tuberculous disease is found." As these lesions had developed during ultra-violet radiation—and the patient had not spent long hours on her feet—I naturally hesitated about resuming that treatment. However, on May 2nd, 1927, I very cautiously began it again, and fortunately with no recrudescence of the affection.

PULMONARY ACTINOMYCOSIS.

BY

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JAMES HOMER WRIGHT,¹ in his account of pulmonary actinomycosis, says:

"Definite features are usually wanting until the disease is far advanced. If the lungs are extensively involved there is cough with fetid, sometimes bloody, sputum and signs of bronchitis, pulmonary consolidation and cavity formation, usually in the lower lobes. Cachexia, anaemia, fever of variable type, and the 'habitus phthisicus' occur also. Frequent involvement of the pleura and thoracic wall are a prominent feature."

Most of the fairly numerous cases which have been reported in the literature from time to time conform more or less closely to the above classical description, and the majority of them have masqueraded for a considerable period as cases of pulmonary tuberculosis. Most of the authors seem agreed also in regarding the pulmonary variety as having the worst prognosis and being the least amenable to treatment. Thus Illich² collected 58 cases without a single recovery. Maier records 7 recoveries out of 35 cases.

Samuel West³ records 30 cases of actinomycosis of the lungs and pleura with 26 deaths; of the remaining 4 patients 1 was apparently cured, the others were discharged with the condition unrelieved, and were subsequently untraced.

Foulerton⁴ reports 14 pulmonary cases from the records of the Middlesex Hospital: 9 patients died, 2 were transferred to the infirmary in a hopeless condition, 1 was

untraced, and 2 were apparently cured. Of the 2 successful cases it would appear that at first operative treatment was employed without producing any favourable effect; cure seems to have been effected in one case by the administration of large doses of potassium iodide, in the other by means of an autogenous vaccine. Rickman Godlee,⁴ after a description of 13 cases of actinomycosis, states his opinion that although potassium iodide is useful, surgical intervention is of primary importance. Of his 4 pulmonary cases 3 patients died; the fourth recovered as the result of surgical intervention followed by the administration of potassium iodide in 40-grain doses three times daily. Bigland and Sergeant⁵ report the case of a man suffering from pulmonary actinomycosis complicated by empyema. The empyema cavity was washed out with colloid iodine; the patient, who recovered, also received intravenous injections of iodine, and potassium iodide in large doses by the mouth.

The two cases under my own care, which are described hereafter, seem of sufficient interest to be put on record, first, on account of the somewhat unusual mode of onset, and secondly, on account of their favourable response to simple medical treatment.

CASE I.

A married woman, aged 47, was admitted to Croydon General Hospital on August 11th, 1927, with a history of one week's cough, with offensive expectoration and pyrexia. She looked ill, and had a hectic flush on the cheeks; the temperature was 101° to 102° F., the pulse 128, and the respirations 24. She had an impaired note at the right apex, harsh breath sounds, and very striking post-tussic suction. She was coughing up thick yellow pus, which smelt so offensively that I made a diagnosis of abscess of the lung, although I must confess that I was decidedly puzzled as to its etiology. An x-ray photograph showed a dull opaque area at the right apex, which, however, was less extensive than I had anticipated from the physical signs and from the large quantities of offensive pus which the woman was expectorating. I decided to watch her for a few days before thinking of any surgical procedure, and in the meantime put her on the balcony and gave her creosote by the mouth and by inhalation.

A specimen of sputum was sent for examination, and on August 15th Dr. Guest reported: "The predominant organism is a Gram-positive filament, many of the filaments presenting true branching. I have little doubt that this is a case of actinomycosis." On August 18th a further specimen showed the same organism predominating; on August 19th it was still present, but in diminished numbers, and there was a profusion of streptococci. On August 22nd, however, the streptothrix filaments, showing true branching, predominated.

On receiving the pathological report I put the patient on potassium iodide, 10 grains thrice daily by the mouth, and started her on a course of intramuscular injections of lipiodol (Lafay) twice weekly, commencing with 1 c.cm. and increasing up to 10 c.cm. Altogether she received 87 c.cm. of lipiodol in this way during her stay in hospital. The iodide was also increased up to 40 grains thrice daily.

On August 27th I injected 20 c.cm. of lipiodol intratracheally by the crico-thyroid route—the technique employed being that recommended by Chandler⁷—the patient being semi-inverted and turned on her right side. I performed this operation principally in order to obtain a better defined x-ray picture of the abscess, but I also had it in mind that the procedure might be of some therapeutic value. The photograph showed dilated bronchi in the upper part of the right lung field, but the lipiodol had not entered into the opaque area of the apparently closed abscess cavity. While of some value from the point of view of localization, therefore, it is doubtful whether my procedure had the desired effect of bringing the lipiodol into contact with the actual area of disease. The cough gradually subsided, and after September 1st the patient had no expectoration.

The temperature remained high (evening 100° to 101° F.) until September 14th, after which it was normal until her discharge from hospital on October 10th. At this time she still had an impaired note to percussion at the right apex and a few coarse rales. Her general condition was excellent, and she had no symptoms at all. For two or three months after discharge she took tincture of iodine (French Codex), 5 minims thrice daily in milk; after that she had no treatment until October, 1928, when I put her on iodine again for a few weeks. At the present time her condition is excellent, and there is nothing abnormal to be detected in her lungs either by physical examination or by x rays.

No "clubs" were ever demonstrated in the sputum, but the branching filaments were so typical on four separate occasions that I do not think there can be any serious doubt as to the correctness of the diagnosis. Wright¹ says that the demonstration of filaments showing true branching justifies the diagnosis, even though clubs are never seen. The patient had never been in contact with horses or other animals and denied ever having chewed grass or straw. She had some vague dyspeptic symptoms, but there was nothing at all to suggest any abdominal focus of disease; a barium meal of the whole alimentary tract showed nothing abnormal.