# SOCIETIES' PROCEEDINGS

## ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

**December 2, 1927.**

*President*—H. S. BARWELL, F.R.C.S.

**Deep X-ray and Radium Therapy in Relation to the Mouth and Upper Respiratory Tract**—W. L. WATT, M.D., and N. S. FINZI, M.B.—The paper is published in the *Journal of Laryngology and Otology*, Vol. xliii., March 1928, p. 191.

### DISCUSSION.

Mr STANFORD CADE said the treatment of malignant disease of the oral cavity by radium was a two-fold treatment; that of the primary growth in the mouth, and that of the secondary deposits in the neck. These were carried out by two distinct methods.

The prognosis and outlook in these cases varied with three distinct data: (1) The anatomical situation of the growth; (2) the gross macroscopical type of tumour; (3) the condition, not of the karyokinetic index of the cells of the tumour, but of the stroma surrounding the tumour.

With regard to the anatomical situation, lesions of the roof and back of the mouth responded to the irradiation better than did those of the floor of the mouth, and tumours of the palate could, in nearly every case, be made to disappear by radium, also tumours on the pillars of the fauces. In the tongue, the most favourable situation for a tumour as regards treatment was the antero-lateral aspect, the least favourable the antero-inferior involving the floor of the mouth. He did not agree with Regaud, who stated that the most unfavourable growths of the tongue were the posterior ones. By an efficient approach, posterior carcinoma might be made amenable to irradiation.

The papillomatous variety, which surgically was the most malignant type of growth, responded very well to radium treatment; less protection was required and the necessary dose was small. The next favourable group was the ulcerative growth, while the worst was the nodular type with a good deal of induration.

With regard to the condition of the stroma, if one was dealing with a tumour embedded in an area of œdema, the results were very bad. It did not matter if the tumour was large and rapidly growing, if the surrounding stroma was healthy and there was no œdema the results would be good. That made one think there was more than a local reaction obtained by applying radium. The karyokinetic index was of no importance.

From the point of view of technique, it was very important to have the mouth very clean, which meant the sacrifice of nearly all the teeth in most cases. His custom was to treat the primary lesion first, and then the glands; but in the case of the pharynx it might be advisable to reverse the procedure. This was not the occasion to discuss screening and dosage.



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

He had been using small doses of radium, well screened with ½ mm. of platinum for each 0·6 mgm. of radium element used, by means of needles inserted into healthy tissue, not into the growth. To prevent necrosis of the bony arches surrounding the mouth, one had either to do a periosteal resection of the ramus of the lower jaw, or put in a lining of lead in the mouth. This could be done if the teeth were extracted and two plates of vulcanite made, containing a layer of lead 1 mm. thick. In that way necrosis of the jaw was abolished.

With regard to the neck, he thought a period of three or four weeks should elapse before another dose was given if all was well; otherwise three or four months should elapse between the treatment of the growth and the treatment of the neck. The method of treating the neck was by means of radium applied at a distance of 3 cm. to 1½ cm. from the skin on Columbia paste collars. In applying radium by needles surrounding the growth, none were put actually into the growth. The needles were maintained in position by sutures, and another suture led outside the mouth, in this way avoiding the possible loss of needles. In a case of the nodular variety the growth disappeared after radium treatment, and the man was alive and well three years afterwards.

In another case of malignant disease of the tongue there was no scarring, and the part was quite supple. Both the foregoing patients had involvement of glands, the cancerous involvement having been proved under the microscope. These patients were alive three years and three and a half years afterwards. In a case of the ulcerative type the man died of secondary deposits in the neck, but on the opposite side to that of the growth. In a papilliferous growth with malignant glands of the neck, the patient was now alive and well. In a further case of very extensive malignant disease of the side of the tongue (histologically proved), the man had a syphilitic glossitis, with a large ulcer and leucoplakia. The condition had disappeared and the mobility of the tongue was restored to normal.

He would illustrate an instance of over-enthusiasm in radium treatment. The patient had diabetes and valvular disease of the heart, also a large epithelioma of the inferior surface of the tongue involving the floor of the mouth. He was subjected to a much larger dose of radium than it was his (the speaker's) practice to give, and necrosis ensued. The growth disappeared, but not as it should have done, by shrinking, but it sloughed out, and the slough took nine months to separate, and an enormous œdema of the tongue was left, due to an overdose and bad screening.

In a recent case of epithelioma of the tongue, with a huge mass of glands in the submental region, the tongue condition had completely disappeared after radium treatment; the neck was subsequently treated with a collar, and the patient was clinically well.

In an extensive carcinoma of the soft palate in a man aged 73, with malignant glands on both sides of the neck, he (the speaker) did an extensive bilateral dissection of the glands, following Crile's technique, and treated the primary growth with radium. At the end of the treatment the palate was normal.

He (the speaker) considered there was some justification for giving radium the benefit of the doubt, especially if results obtained by it were compared with those of surgery. The least that could be said of radium



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

treatment was that there was less mutilation, the speech was not so much impaired, and life was prolonged for two or three years with comfort. It remained to be seen whether the ultimate results of the treatment were as good as those of surgery.

Sir WILLIAM MILLIGAN said he thought that radium was at last coming into its own. It had struggled for many years in the region of inoperable surgery, before obtaining adequate recognition, while the opposition which met an attempt to treat by radium a case considered surgically operable was well known. Ten years ago he had asserted at the Manchester Radium Institute that radium would never have a fair chance until someone had the courage to use it in a case recognised as surgically operable. At St Bartholomew's Hospital, that morning, there had been a demonstration on the subject which he regarded as epoch-making; and those who had seen the cases produced by Mr Douglas Harmer, Mr William Rose, and Dr Finzi must have been greatly impressed by them; he certainly had never seen anything comparable except a few cases at a clinic in Brussels. He had himself been intimately associated with radium treatment for many years, and he had gone through all the various phases—applicators, needles, spicules, seeds, and so on. He agreed that if it was intended to use "seeds" in the treatment of new growths, it was infinitely better to use them screened than unscreened. Their experience at Manchester had been that if unscreened glass spicules were employed they caused much pain, and sepsis was very liable to occur, but if they were screened through 0·3 mm. of platinum these untoward results were avoided.

What was the attitude of the general surgeon to the surgical treatment of the tongue to-day? The pendulum was now strikingly swinging in the direction of non-surgical interference in malignant disease of the tongue, *i.e.*, treating it by the insertion of radium needles. The results were very remarkable indeed. Several of the surgeons at the Manchester Royal Infirmary had now practically ceased to operate on the tongue by the knife; the cases were sent to the Radium Institute.

Many points of technique arose. One was as to whether the glands should be removed before giving radium treatment, or whether radium treatment should be given first. He asked the openers of the discussion whether, when radium was introduced, the radio-activity stimulated the growth of glands? If so, that seemed to be an argument to remove the glands before attacking the growth. At the Radium Institute in Manchester it was the custom to treat the primary growth first, and to remove glands afterwards. Where possible, a block resection was performed. If cancer was to be successfully treated, whether surgically or non-surgically, it was essential that the glandular area should be removed. Laryngologists were, perhaps, rather liable to miss that point; they were apt to deal with the local lesion in the mouth or larynx, and to omit the lymphatic tributaries of the area outside the growth. If this was neglected, he thought there was a much greater liability to recurrence.

The position to-day with regard to radium treatment was extremely encouraging. Unfortunately at the moment, the dosage for any particular growth could not be set down accurately, but the solving of this problem was only a matter of time. It was now realised that the actual histological



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

character of the growth ought to have a considerable influence on the treatment. Generally speaking, the more closely a tissue approximated to the embryonic form, the better were the results of radium irradiation likely to be. The more definitely "formed" and fibrous the tissue, the more likely was it to respond to surgery rather than to the emanation.

Dosage was a difficult matter in any branch of medicine, and infinitely more so in the case of a radio-active body. But the progress which had been made, both abroad and in this country, was a promising augury for the future.

He believed that to be successful in the treatment of malignant disease, one must not rely entirely on one's own resources. This was essentially a matter for team-work by the surgeon, the radiologist, and the pathologist. If work could be done on co-operative lines, with a higher scientific appreciation of the capabilities of radio-active bodies, statistics would show a steady improvement. With improved methods of technique, better screening, care in burying tubes, and the prevention of sepsis, results were improving day by day.

He had seen cases treated while the mouth was septic; and such a condition was practically certain to ruin results. As Mr Colledge had pointed out in his recent Semon Lecture, it was necessary to have all suspicious teeth removed before a laryngectomy was performed, and it was equally important, even if the growth in the mouth was only small, that sepsis in the mouth should be eliminated before radium treatment was begun.

He did not agree with Mr Cade about the tongue; he (Sir William) considered that growths at the back of the tongue were less favourable than those further forward.

On the whole, the prospects with regard to the treatment of malignant disease were improving. It had, at least, been realised that the earlier the disease was attacked, and the earlier the glandular field was dealt with, the better; and with the aid of radium, lesions in various parts of the body could be dealt with successfully and without destroying the function of the part.

Mr H. S. BARWELL (President) said he had been astounded at the results which had been achieved, and which had been obtained by attention to detail and by gradual improvement in technique. This advance was due to the painstaking, continuous work of radiologists, to whom a debt of gratitude was due. At the demonstration which had been held that morning at St Bartholomew's Hospital, Mr Douglas Harmer had said to him with regard to the question of surgical operation versus radiotherapy, that if he saw a case of malignant disease of the larynx which was too far advanced for laryngofissure but was suitable for laryngectomy, radiotherapy should be tried first. If, however, the case seemed suitable for laryngofissure, he was somewhat doubtful as to the course he should take. That, he (the President) thought, also expressed what, doubtless, many members felt on the matter.

Dr WATT said he thought the only question requiring an answer was as to the advisability of removing glands, or a piece from the tumour, for diagnosis. He was in favour of this, because so many doubted the nature



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

of the growth if pathological confirmation were not produced. He had never seen harm ensue from excision of a gland, and if it were done quickly, and the report supplied as soon as possible, there was nothing against the procedure. When the glands were the size of an almond he treated the growth and the glands at the same time, but, if they were larger, it was better to treat the growth first and the glands afterwards.

Dr FINZI said Mr Cade was right in his remarks about the stroma round the growth. A great factor in getting rid of the growth was by action on the stroma immediately surrounding it. It was difficult to say whether the growth of glands was stimulated by inserting radium into the intra-oral growth. There were cases of cancer of the tongue in which the swelling of the cervical glands disappeared after treatment, and when that happened one assumed that the enlarged glands had been merely septic. There were, however, cases in which the glands had continued to enlarge after the application of radium to the primary growth. Whether so much enlargement would have occurred had no radium been applied it was difficult to say. Though a small dose of irradiation could previously be given to the glands, the primary growth must be attacked first, and the glands dealt with as soon as possible afterwards.

With regard to removing a portion for microscopical examination, this should be preceded by some treatment to prevent insemination. He did not think there was much danger from removal of a piece in the slowly-growing types, but in the rapidly-growing types the danger of insemination was real: he referred to such conditions as lymphosarcoma.

**Diathermy Removal of the Entire Soft Palate and one Tonsil for Endothelioma**—DAN MCKENZIE, M.D.—In a male, aged 57, the neoplasm had already been removed once when the patient came under the care of the exhibitor, and a recurrent growth about the size of a pigeon's egg occupied the soft palate and had led to one or two small satellites in the right faucial pillar.

The cervical operation—removal of glands, and ligature of carotid—and the operation on the pharynx were performed at the same séance, on 1st August last.

**Carcinoma of the Ethmoid treated by Operation and Radium** — HAROLD KISCH, F.R.C.S.—Male, aged 59, on 19th September 1925, gave a history of repeated attacks of epistaxis during the last ten months, frontal headaches and purulent discharge from the left nostril. The left nostril had become obstructed, the vision of the left eye was affected, and he had lost weight. On examination the left side of the nose was found filled with a red, friable, polypoid mass. A portion of this was removed, and the pathologist reported that it was histologically a carcinoma. On 27th October 1925, lateral rhinotomy was performed, and the growth was found to fill the antrum and ethmoidal region, and to extend into the sphenoidal sinus and the infundibulum of the frontal sinus. It was removed as completely as possible. On 14th November 1925, 50 mgm. of radium were



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

placed into the ethmoidal region, and 100 mgm. into the antrum, and left for twenty-four hours. Platinum and rubber filters were used.

As a result of the early application of the radium the skin incision broke down, leaving a fistula, which gradually increased in size, so that the whole interior of the nose can be directly inspected. No local recurrence has taken place, but on 8th June 1927 a mass of glands was found in the right supraclavicular fossa. These were submitted to intensive X-rays and have disappeared.

**Microscopical Sections of Epithelioma of the Vestibule of the Nose, before and Six Months after Treatment with Radium. (Case shown 4th May 1923.)***—Sir JAMES DUNDAS-GRANT, K.B.E., M.D.—A pale, warty growth in the vestibule of the nose was removed for microscopical examination and reported to be epithelioma, as shown in the first microscopical section. After six months' treatment a portion of the same growth was removed and the second microscopical section shows the changes in the tissue produced by the radium. The cells of the superficial epithelium are vacuolated and necrotic, and there is a well-marked invasion of polymorphonuclear leucocytes, together with small areas of hæmorrhage. The corium shows in addition to polymorph cells, granulation tissue cells and fibroblasts. A very noticeable feature is the thickening and hyaline degeneration of the walls of the arteries.

**Microscopical Sections and Drawings from a Case of Lymphosarcoma of the Pharynx and Nasopharynx. (Case shown 6th March and 1st May 1925.)**†—Sir JAMES DUNDAS-GRANT, K.B.E., M.D.—A hard, vascular non-ulcerated growth in the soft palate and in the nasopharynx, producing complete nasal obstruction, was treated by the introduction of two radium needles through the left nasal fossa into the growth; they were kept in position for twenty-four hours (11th March 1925). Breathing through the nose became possible almost at once, and at the end of the week it was quite easy. On 1st April, three radium needles introduced into the palatal growth produced great diminution in a week, while at the same time the enormous glandular mass on the left side of the neck shrank with greatly increased rapidity. The patient eventually developed mental disturbance and died elsewhere, presumably from extension to the brain.

A microscopical examination of the growth which was removed was reported as showing lymphosarcoma.

**Fibrosarcomata of Nose treated by Radium**—E. A. PETERS, M.D., and N. ASHERSON, F.R.C.S.—Male, aged 17, appeared seven years ago with a history of having had his tonsils and

* *Journ. of Laryngol. and Otol.*, 1923, vol. xxxviii., p. 486.
† *Journ. of Laryngol. and Otol.*, 1925, vol. xl., p. 666.



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press

adenoids removed recently. On examination a sessile tumour was seen on the posterior wall and roof of the pharynx, passing into the nose on the right side. It did not appear to be suitable for removal by operation. Microscopic section showed a fibrosarcoma. Up to six months ago, the tumour was treated by diathermy on several occasions.

*Condition on Examination.*—The nose was broadened out, and extruding from the right nasal orifice, and completely occluding it, was a fleshy, bluish-red mass. The septum was pushed over to the left. The left nasal cavity was patent. A probe could be insinuated between the tumour and the septum on the right side. The right eye was definitely proptosed, no diplopia, vision and eye movements were normal. There was slight epiphora and the right cheek was bulged; there were no glands palpable. The palate was not bulged and the posterior part of the tumour could be clearly seen with a postnasal mirror. The condition was not painful, and there was no anæsthesia of face.

A skiagram showed absence of normal ethmoidal structures on the right side. The septum was pushed over to the left.

On 31st May 1927, one tube containing 100 mgm. of radium sulphate, with platinum screen 0.5 mm. thick, was embedded in the centre of the tumour; two tubes each containing 50 mgm. of radium sulphate in platinum case 0.5 mm. embedded in the periphery of the polypus. The total exposure was for nineteen hours, *i.e.*, 3800 mgm. hours of the sulphate, equal to 26,677 mgm. hours of the radium element. The application of radium was followed by erythema of the skin over the nose. This cleared up in fourteen days.

*Condition on 22nd November* 1927.—The tumour had shrunk considerably and was now only seen on rhinoscopy. The swelling of the cheek was less and the proptosis not so marked. A further application of two tubes of 50 mgm. of the radium sulphate, screen 0.5 mm. platinum was given for twenty-four hours, *i.e.*, 2400 mgm. hours of sulphate equal to 1684 mgm. hours of the element.

## THE SCOTTISH SOCIETY OF OTOLOGY AND LARYNGOLOGY.

### TWENTY-SIXTH MEETING, EAR, NOSE AND THROAT HOSPITAL, GLASGOW.

**November 26, 1927.**

*President*—JAMES ADAM, M.D.

**Tumour of Cerebello-Pontile Angle**—JAMES ADAM, M.D.—Male, aged 44, had commencing deafness in right ear in 1910. In June 1926, had sudden paralysis of whole of right side of face. In September 1926, inflammation of the right eye was present, and by



https://doi.org/10.1017/S0022215100031637 Published online by Cambridge University Press