SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

March 5th, 1937

President—LIONEL COLLEDGE, F.R.C.S.

CASE

Unilateral Choanal Atresia in a Woman, aged 23.

—T. B. JOBSON.

The patient had noticed obstruction of the right side of the nose and some discharge ; otherwise she was perfectly healthy. Pharynx normal. She had reached the age of 23 without appreciating the fact that she could not in the slightest degree blow through the right nostril, although she could easily blow through the left.

On examination.—Right nostril full of muco-pus. Trans-illumination clear. At first a foreign body was suspected but, on passing a probe, a complete bony wall was found closing the choanal opening.

DISCUSSION.

HERBERT TILLEY said that his personal experience of this form of posterior choanal atresia was limited to three cases. In the first patient the central portion of the diaphragm was membranous and was easily punctured by an antral trocar and the bony margins were enlarged by suitable bone forceps, but in the course of a few months the choana became entirely occluded again. The late Sir Charters Symonds suggested that, in order to prevent such post-operative stenosis, the median or vomerine border of the choana should be freely removed. This suggestion was adopted in the second and third patients, and the results left nothing to be desired.

SYDNEY SCOTT said he had seen only five cases of the kind. The first, many years ago, was bilateral, in a child. The surgeon pierced the membrane which occluded the posterior choana, but removed no bone, and recurrence of obstruction took place. The second case was a child under his own care, and he removed the posterior part of the vomer with a small Ostrom's punch ; the procedure was successful. Another case was one that he had seen for the late Mr. Rose at St. Bartholomew's Hospital, and this had been treated in the same way, as had the fourth case seen more recently at the same hospital. The fifth case was in an infant who died within a few days of birth, without operation.

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

L. GRAHAM BROWN said that during the past year he had dealt with two cases of unilateral occlusion. The first was in a woman of about the same age as Mr. Jobson's patient. He performed the same operation as Mr. Tilley, but he allowed the patient to wear a rubber tube for five or six days. She had done very well. The other case was that of a child, aged 3, in whom the chief symptom was suppuration. It was necessary to deal with the infection in this case, and at that age it was difficult to use forceps in the posterior region of the nose. He used a frontal sinus rasp as perforator.

J. F. O'MALLEY said that an interesting aspect of this case was concerned with the physiology of the nose. To demonstrate that no air was going through, he used a tambour, and that showed that movement of air was absent on the right side. Another interesting problem was presented by the temperature in the nose on both sides. In the normal side it was under 94° F., on the other it was 98° F. A further point of interest was the emptying of the antrum. He suggested that Dr. Jobson should inject lipiodol on both sides and then compare by X-rays the rate of escape. That would throw some light on the question of how much the emptying was due to the activity of the cilia alone, or to currents produced by variation of air pressure in addition.

C. A. SCOTT RIDOUT said that he had shown at a previous meeting a patient aged about 19, who had double congenital posterior choanal atresia. The chest measurement was under the average. The operation of which Mr. Tilley had spoken was carried out and the patient then breathed freely. The turbinates were very corrugated, and the patient had no sense of smell; he had never had suppuration or a cold in the head.

T. B. LAYTON wished to point out that when these patients with double congenital atresia of the choana reached adult life they had perfectly developed facies and palates. Why operate on them during childhood when operations on the back of the nose were very difficult? It was better to wait until adult age when, if symptoms were present, a more satisfactory operation could be carried out. He asked whether anyone had seen a skull with bone in the posterior choana, or a soft specimen with this deformity, or had heard of any anatomist who had heard of such a condition. If so, where did the bone come from? Was it part of the vomer, or from some other part of the skull?

T. B. JOBSON (in reply) said that he had shown the case because the condition was uncommon. Stewart, of Edinburgh, had published in 1936 an account of similar cases, and stated that there had been only six cases during twenty years at Edinburgh Royal Infirmary. He himself had had only one case in eighteen years.

The Effect of Deep X-Ray Therapy in a Case of Carcinoma of the Hypopharynx and Cervical Glands

By W. J. McNALLY (Montreal)

A.J., male, aged 52, first noticed shortness of breath in *February*, 1935. He continued his work as a teamster until *April*, when he developed hoarseness and difficulty in swallowing. In *May* he

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

noticed a swelling on the left side of his neck. He became bed-ridden in *June* and was admitted to the Royal Victoria Hospital, Montreal, on *July 29th*, 1935.

Condition on admission.—He weighed 120 pounds, having rapidly lost about 15 pounds. He looked older than his stated age. He suffered from dyspnœa and stridor, and became comatose shortly after admission. There was a hard glandular mass on the left side of the neck, about 6 cm. in diameter. The nose and ears were normal. The patient was edentulous. In the left hypopharynx a mass, 2 cm. in diameter, filled the pyriform sinus. The surface was ulcerated and covered with a greyish exudate. This mass involved the left aryepiglottic fold and lateral pharyngeal wall. The epiglottis, which was infantile in type, was displaced to the right and overhung the larynx. It seemed to be the cause of the respiratory obstruction. The vocal cords could not be seen. A clinical diagnosis of a malignant growth of the left pyriform sinus was made.

A low tracheotomy was performed as an emergency measure, and following this, the general condition improved after a few days. The Wassermann reaction was negative. A direct laryngoscopic examination confirmed the above description of the growth. Sections of the biopsied tissue showed squamous-celled carcinoma with extensive necrosis and without keratinization.

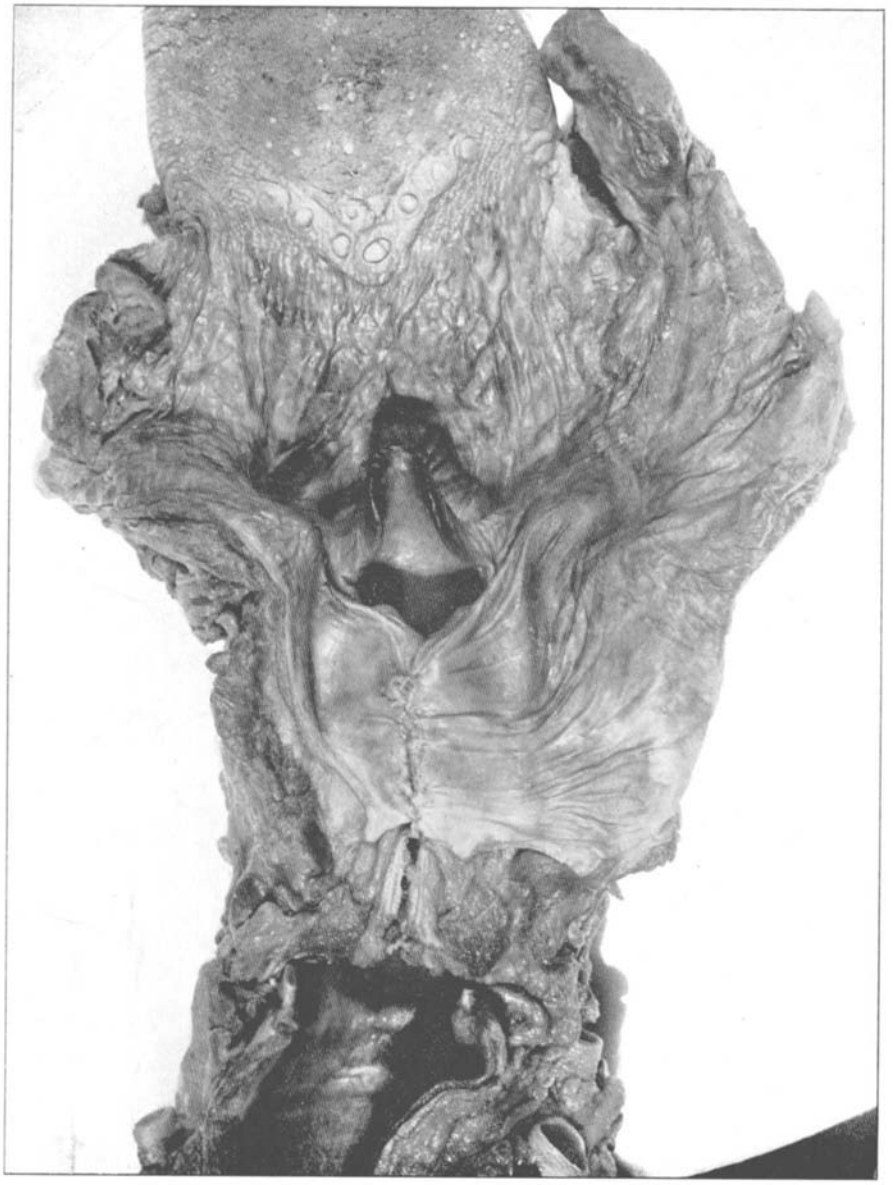
Treatment.—Operative treatment was not considered advisable because of the extensive involvement of the pharyngeal wall and the cervical glands by the growth. After consultation with the radiologist (Dr. A. H. Pirie), it was decided to apply deep X-ray radiation after the method of Coutard. This treatment was begun on *August 7th*, 1935, about a week after admission. Twenty-five daily treatments were given in the neck region. Each was equal to an epilation dose, or 250 r (with 200 kv., 5 ma., at 16 in. distance; filter ½ mm. copper and 1 mm. aluminum). The patient had, in all, 3,250 r to the left side of the neck and 3,000 r to the right side.

Result.—During the treatment the glands on the left side of the neck suppurated and had to be drained. It was feared that this suppurating mass might interfere with the efficacy of the radiation but the treatment was continued.

A direct laryngoscopy, on *October 1st*, 1935 (about a month after completion of treatment) showed the mass in the pyriform sinus to be greatly reduced. The sinus on the left side of the neck had closed and the glandular mass was reduced to a quarter of its size on admission. The tracheotomy tube was removed and the patient was discharged much improved. Unfortunately, the chest was not examined by X-rays.

Subsequent history.—A direct examination of the larynx on *November 7th*, 1935, showed slight thickening of the epiglottis, but

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press



The left pyriform sinus is slightly narrower than the right, otherwise nothing remains to indicate the site of the tumour. The suture line in the post-cricoid region indicates where the larynx was opened at the *post mortem* examination for inspection of the interior.

[*face p.* 556

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

there was nowhere any evidence of growth or of ulceration. There was still some thickening of the tissues on the left side of the neck.

The patient was not seen again until *September*, 1936. He had been fairly well until *July*, 1936, when he developed a persistent dry cough and a dull pain in the left chest. He came to hospital *September*, 1936, and was found to have a diffuse consolidation of the left lung. Clinical investigation, including a skiagram of the chest, led to the diagnosis of malignant tumours in both lungs and a diffuse left-sided pneumonia.

Local condition.—The hypopharynx was normal in appearance. The infantile epiglottis was pulled slightly to the left. The ary-epiglottic folds on each side were normal. Both pyriform sinuses were normal. The vocal cords moved freely. There was no evidence of the original growth in the throat. The skin of the neck showed marked telangiectasis as a result of the X-ray treatment. The tracheotomy wound was firmly healed. The skin over both sides of the neck was soft and freely movable. A few small firm nodules were palpable on the left, but these could not be considered as enlarged glands.

He recovered sufficiently from the pneumonia to be discharged to a convalescent home on *October 19th*, 1936. He was fairly well for a few weeks, and then contracted left-sided pneumonia again. He came to hospital extremely ill on *December 5th*, 1936, and died on the following day (fifteen months after completion of the deep X-ray treatment).

Post mortem findings.—Local : There was no evidence that there had ever been a growth in or about the pharynx and larynx (see illustration, facing page 556). The left pyriform sinus was slightly narrower than the right, but it was impossible to make out any gross induration, scar, or mucosal defect.

A soft grey tumour mass, resembling new growth, filled the lumen of the left lower lobe bronchus in its second and smaller divisions. This replaced the bronchial wall and fused with a solid grey granular cut surface which involved the left lung. Thick purulent material exuded everywhere, so that the tumour could not be differentiated from the partly organized exudate. As might be expected, there was evidence of a recent fibrinous and an old pleurisy on the left side and a recent fibrinous pericarditis. A few small, firm, grey nodules were found in the right lung and in the right lobe of the liver. Lymphogenous tumour invasion was traced from the peribronchial glands to the peri-œsophageal, gastric, and portal lymph-glands.

Histological Summary

Left pharyngeal region.—Several sections from the region of the pyriform sinus were examined. These showed a margin of stratified

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

squamous epithelium with a flat intact basement layer. Beneath this, numerous glands showed partial atrophy. The fibrous connective tissue layer showed loss of nuclei and irregular shrinkage and concentration of the remaining nuclear material. There was hyaline fusion of collagen fibrils. There were few vessels and no budding capillaries could be seen. No definite tumour cells were found.

Left cervical and mediastinal glands.—Numerous sections showed a variable degree of prominence of large pale reticular cells and a relative loss of small lymphoid cells. This was more marked in the cervical glands. The surrounding fibrous connective tissue showed the atrophic changes described above. No tumour cells were found.

Left lung and lower bronchus.—All bronchial coats were invaded and mostly replaced by a mass of immature polymorphic epithelial cells. In some places the tumour cells were irregular columnar and had a slightly glandular arrangement, while in others they showed a metaplasia to immature pavement epithelium and formed solid cell masses. There was extensive direct invasion of the lung tissue, and tumour cells filled some lymphatics and some of the small blood-vessels.

Right lung, liver, and regional lymph-glands.—Sections showed a neoplastic picture similar to that described in the left lung and bronchus. Cells resembling immature squamous epithelium predominated.

Anatomical Diagnosis

X-ray scarring of the left peripharyngeal tissues, and of the integument of the left side of the neck (without carcinoma cells). Polymorphic carcinoma of the left lower bronchus, with direct extension to the lung and peribronchial glands; metastases in the lower œsophageal, gastric, and portal glands, and in the right lung and liver.

A generalized septicæmia was the immediate cause of death.

Comments and Summary

(1) A malignant growth in the hypopharynx and cervical glands, which was considered inoperable, was destroyed by deep X-ray radiation, and the patient was freed from most distressing throat symptoms during the remaining fifteen months of his life.

(2) The above result is sufficient to justify deep X-ray therapy in a similar case even though an inaccessible growth in some other part of the body may prove fatal.

(3) In spite of the fact that suppuration occurred in the cervical glandular mass during the course of the deep X-ray radiation, there was a disappearance of the growth both in the hypopharynx and in the cervical glands. It is suggested as possible that the suppuration

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

and discharge from the neck wound may have removed some of the necrotic malignant tissue which had been partly or completely destroyed by the X-ray therapy.

(4) When a malignant tumour has been located in any region, a thorough clinical search for tumours in other tissues and organs is indicated. The frequency of metastases, as well as the occurrence of multiple tumours (which are morphologically quite different) in the same patient, are well-recognized features.

(5) The question of cure cannot be considered in this instance, but the gross and microscopic absence of tumour cells in many histological sections of the neck tissues is worthy of note.

This case is one of a series included in a preliminary report of the results of treatment by deep X-ray therapy in twenty patients, by D. M. MacRae and A. H. Pirie, which will be published shortly. For the pathological report in this case, I am much indebted to Doctor W. H. Chase, assistant pathologist of the Royal Victoria Hospital and lecturer in pathology at McGill University.

DISCUSSION.

The PRESIDENT said that this case raised the question whether irradiation produced metastatic deposits; they seemed to occur frequently in cases in which the primary growth disappeared and did not recur. On the other hand secondary metastatic deposits were rarely seen in cases which went on for a long period after excision; if these succumbed later it was generally to a local recurrence. He mentioned one case which was treated by radium. The growth had been too far advanced to be dealt with by laryngofissure, and excision of the larynx was contra-indicated because the patient had old hemiplegia. The result of the treatment by radium was locally perfect, but the man died of secondary deposits in the liver and lungs in less than two years. That was very rare with carcinoma of the larynx.

W. A. MILL agreed with the President's remark that radium therapy drove the carcinoma cells far from the primary growth. In a number of cases, especially those treated by radium bomb, which he had followed up, that had been the case.

W. J. MCNALLY (in reply) said that no attempt had been made to treat the secondaries in the chest.

With regard to irradiation following operation, he asked the President whether he approved of following laryngofissure or laryngectomy by a course of deep X-ray therapy. Did he think that this would disseminate any possible growth, or that it would be a protective measure?

The PRESIDENT, replying to Dr. MCNALLY, said he was now against following laryngofissure by deep X-rays, as the results of this treatment of recurrences had been uniformly bad. His advice was, if it was proposed to combine surgery with irradiation, that irradiation should be employed first, then, when the skin had healed, the operation should be performed. Apparently there was no hope that the few remaining cancer cells might be killed by means of post-operative irradiation.

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press

Basal-celled Carcinoma of the Palate.—W. A. MILL.

Male, aged 49.

History.—Admitted to the Royal Cancer Hospital in the summer of 1936 complaining of a swelling of the roof of the mouth, involving practically the whole of the hard palate, but more marked on the right side, expanding the right alveolus and causing some swelling in the right side of the cheek. A skiagram showed irregularity and bone absorption of the right maxilla. The first section taken was reported as a mixed salivary tumour. It was hoped that the tumour might be shelled out, but, owing to infiltration, this proved impossible. Examination of a further microscopical section resulted in the diagnosis of adenocystic basal-celled carcinoma. It was decided to see the effect of radium bomb treatment and 91 gm. hours were given. The tumour was very much reduced in size but did not by any means disappear. In *November* the right hard palate and tumour were removed and the walls treated with diathermy. An obturator was made and radium inserted into it, the dose given being 1,150 mgm. hours.

J. F. SIMPSON said that he had had a similar case in a woman with a " parotid tumour " in the palate. In 1935 she was treated by radium, and the growth appeared to subside. Later she suffered from deafness ; it was a catarrhal deafness, because the nasal septum had become involved and was splayed out, as the palatal tumour took on a malignant change. He had removed the tumour, and at present the patient was well.

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

March 5th, 1937

President—DOUGLAS GUTHRIE, M.D.

Labyrinthine Reactions and their Relation to the Clinical Tests

By W. J. McNALLY (Montreal)

OUR present knowledge of labyrinthine function began with the contribution of Purkinge in 1825. The rotation test was introduced to the clinic about fifty years ago through the work of Kreidl, of James, and of Jansen. The caloric test is little more than twenty-five years old and was introduced by Bárány and brought to its present form by Kobrak. The rapid tilt test, first introduced as a clinical test by Tait and McNally in 1926, has not yet received the general recognition that it deserves.

https://doi.org/10.1017/S0022215100043929 Published online by Cambridge University Press