SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY.

November 6, 1931.

President—Mr. WALTER HOWARTH, F.R.C.S.

DISCUSSION ON PHARYNGEAL AND LARYNGEAL PARALYSIS.

Dr. LEWIS R. YEALLAND.

The last four cranial nerves are concerned in the mechanism of speech and swallowing, between which there is a certain interdependence, the act of one inhibiting the act of the other. Their bulbar nuclei are associated with higher relays of cortical origin (pyramidal tracts). Lesions may therefore be divided into supranuclear, nuclear and infranuclear.

Supranuclear Lesions.—After destruction of Broca's area the lungs can still be ventilated voluntarily, and the pharynx, tongue and lips can all be moved separately. But the co-ordination of these separate motor acts is no longer possible and speech cannot be induced. A series of lesions involving the pyramidal tracts within the brain may be limited to one side for a period. In such an instance the occurrence of a lesion on the opposite side will result in double hemiplegia with dysphagia and dribbling saliva (pseudo-bulbar palsy). Upper motor neurone damage is associated with spasticity in corresponding muscles without true paralysis.

Nuclear Lesions.—The nuclei of the last four cranial nerves are scattered through the medulla which contains the centre for the deglutition reflex. In the decerebrate animal swallowing reflexes are elicited when water or dilute alcohol is placed in the mouth. Unlike speech, the act of swallowing is reflex. The afferent neurones of the swallowing reflex arc are contained in the second division of the fifth, the ninth, and the pharyngeal branches of the superior laryngeal nerve. Electrical stimulation of the central end of the latter will excite a single act or a whole series of acts of swallowing. The closure of the larynx is affected by impulses which travel through the superior and inferior laryngeal branches of the vagus. There is therefore a further interdependence between the function of respiration and deglutition in the sense that every act of swallowing inhibits a respiratory movement. Degeneration of nuclei within the bulb occurs in the bulbar type of syringomyelia and progressive muscular atrophy. According to Dr. James Collier, the intrinsic muscles of the larynx and pharynx are not affected in the latter disease, a point of importance to the laryngologist which is further elaborated by Parker and Colledge.* Intrabulbar lesions may produce nuclear damage only, or some of the tracts in the medulla may

* Parker and Colledge, *The Nose and Throat and their Treatment*, 1921, p. 161, London.

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also be involved in the process. A combination of nuclear and tract degeneration may give rise to the following syndromes :—

(a) *Syndrome of the posterior inferior cerebellar artery* in which are damaged the tenth nerve nuclei (ipsolateral paralysis of palate and vocal cord) ; the descending root of the fifth (ipsolateral anæsthesia of the face) ; cerebellar tracts (ipsolateral ataxia); and the spinothalamic tract (contralateral hemianæsthesia, excluding the face). (b) *Syndrome of the twelfth nerve and pyramidal tract* is characterised by hemiplegia alternans hypoglossica. Other combinations of lesions have been described. One of my cases, a female, aged 27, presented clinical evidence of bilateral asymmetrical involvement of the ninth, tenth, and cervical sympathetics and pyramidal tracts. The Wassermann was positive in the blood and cerebrospinal fluid. Autopsy revealed extensive syphilitic arteritis of the bulb.

Infranuclear Lesions.—In the absence of clinical evidence of involvement of tracts in the medulla, considerable difficulty is presented in determining whether a lesion is intra- or extra-bulbar. This difficulty is further increased when the signs are unilateral. At the base of skull the roots of the last four cranial nerves are closely associated, in consequence of which they are inclined to be involved in some combination as the result of meningitis, abscess, gumma, tumour, infection of the bone or fracture of the skull. The nerves may be involved in polyneuritis, notably the diphtheritic type. Lymph spaces of the investing membranes of their roots may contain spirochætes. Clinical evidence of a lesion of any one of the last four cranial nerves makes necessary a clinical investigation of the remaining three. Briefly, evidence of dysfunction is on the same side as the lesion and may be found by an examination of the motor, sensory and reflex mechanism of the glosso-pharyngo-laryngeal apparatus and two muscles of the neck. *A lesion of the ninth nerve* may be revealed in the paralysed half of the pharynx being pulled over to the healthy side when the patient phonates or swallows ; by loss of sensation of the posterior third of the tongue and posterior wall of the pharynx ; and by loss of the pharyngeal reflex. *A lesion of the tenth nerve* produces an abductor paralysis of the vocal cord, paralysis of the soft palate, and abolishes the palatal reflex. *A lesion of the eleventh nerve* paralyses the sterno-mastoid and trapezius muscles. In *a lesion of the twelfth nerve* the healthy half of the tongue pushes the tip to the paralysed side.

Syndromes of the last four Cranial Nerves.—A. Brown Kelly* and St Clair Thomson † detail a list of the syndromes ; the latter author provides an excellent diagram in addition. The lesions are unilateral. A clear conception of the anatomical factors underlying some of the syndromes as described by their authors is rendered difficult. Thus, for example, *the syndrome of Avellis* is characterised by paralysis of the vocal cord and soft palate ; that author attributes the condition to paralysis of the internal branch of the spinal accessory nerve. Unless the sterno-mastoid and trapezius are involved, the eleventh nerve will not be included here as entering into the particular syndrome. *The syndrome of Vernet* refers to

* *Brit. Med. Journ.*, 15th October 1927.

† St Clair Thomson, *Diseases of the Nose and Throat*, Cassell, London, 1926.

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a lesion of the ninth, tenth, and eleventh nerves. *The syndrome of Collet-Sicard* includes the last four cranial nerves. *The syndrome of Schmidt* is a paralysis of the tenth and eleventh nerves. *The syndrome of Hughlings Jackson* is one of the last three nerves. *The syndrome of Tapia* refers to a lesion of the tenth and twelfth cranial nerves.

Although a consideration of more peripheral lesions is beyond the scope of this introduction, it may be mentioned that the muscles supplied by the last four nerves are sometimes involved in myasthenia gravis; and an adductor paralysis of the vocal cords is not uncommon in hysteria.

Mr. Donald Armour.

The commonest tumour found in the "lateral recess" or cerebello-pontine angle of the posterior cranial fossa is the so-called acoustic tumour. It arises from the endoneurium in the peripheral non-glial portion of the vestibular division of the eighth nerve within the auditory canal. It causes by pressure-absorption an enlargement of the porous acusticus internus. From this point the tumour grows inwards throughout the nerve. The neighbouring structures in the cerebello-pontine angle suffer from the secondary effects of compression. Involvement of the seventh nerve is shown by slight weakness of the facial movements and, rarely, by twitching of the facial muscles. Paræsthesia over the area supplied by the fifth nerve, together with a lowering or loss of the corneal reflex on the same side, follow upon involvement of the fifth nerve. The final picture is one of cerebellar inco-ordination and instability, together with headache, vomiting and papillœdema from the increased intracranial pressure due to hydrocephalus.

When bilateral acoustic tumours occur, they are commonly a part and parcel either of a generalised or of a central neurofibromatosis (von Recklinghausen's disease).

The next most frequent tumour in this region, though very much rarer than the foregoing, is the meningioma (endothelioma, mesothelioma). It usually arises from the lower wall of the lateral sinus and by its growth gives rise to very much the same symptom-complex as an acoustic tumour, from which it can be diagnosed only by close attention to the order of onset of the inaugural symptoms. To explain such a widespread involvement of cranial nerves as was seen in the last case, one would have to conceive a meningioma spreading, as Walshe describes it, "like a gradual lava flow" along the floor of the posterior cranial fossa.

As members of this Section must have experienced, circumscribed collections of cerebrospinal fluid may occur in the cerebello-pontine angle, associated with an infective process arising from an otitis media. When the otitis media has damaged hearing, the differential diagnosis from a true acoustic tumour may be very difficult, as the symptoms simulate very closely those produced by a true "recess" tumour.

Finally, the rarest of all tumours occurring in this situation are the epidermoids, cholesteatomata, or "pearly" tumours. They are slowly growing tumours with symptoms of long duration, predominate in the male sex, and usually appear in the second or third decades. There are no pre-operative features, signs, or symptoms which are peculiar to them, as

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contrasted with other "angle" tumours, and their true nature is revealed only at operation or autopsy.

E. WATSON-WILLIAMS said that he had had a case similar to the last in the group in an adult male patient whom he had been able to keep under observation from 1922 to 1930. When first seen there was weakness of the voice due to paralysis of the left vocal cord; there had been weakness of the left side of the face for about a year; in 1917 deafness began, and this was followed by giddiness; there was severe nerve deafness of the left side, with a vestibule insensitive to the caloric test. The facial paralysis increased and was complete in September 1924, for a month, then diminished until February 1925, when it recurred for ten months. At this time there was wasting of the left half of the tongue, and weakness of the left shoulder, although the sterno-mastoid muscle was not involved. In April there was anæsthesia of the left half of the face, and the cornea was nearly insensitive. The hair began to fall out in four symmetrical patches, two on the right, two on the left. By September, the hair was growing again round the edges of the patches, but was quite white: there was severe neuralgia in the left frontal and temporal regions. The pain spread by December to the lower jaw, at which time facial movements began to return; the bald patches had been covered with grey hair; the other hair was still brown; the corneal sensitivity had returned, but the patient still had some vertigo, and fell to the left if he closed his eyes. There was complete paralysis of the ninth, tenth, and twelfth nerves. Later the pain disappeared, the facial movement further improved and sensation became normal; the affection of the eighth and posterior nerves is unchanged. The Wassermann reaction had been negative in blood and cerebrospinal fluid on several occasions. The diagnosis had been polio-encephalitis.

E. D. D. DAVIS said that Dr. W. J. Adie had seen this patient, and made a tentative diagnosis of endothelioma at the base of the skull, in the region of the jugular foramen. The man had left recurrent laryngeal paralysis, and as he was a shop assistant he complained that owing to hoarseness he could not make himself heard, and later the deafness of the left ear worried him. He had no headache and no other symptoms.

The patient in his other case had been seen by Dr. Gordon Holmes. This patient was now complaining of dyspnœa at night, and of stridor which disturbed the whole house. The left vocal cord was becoming affected. The question of tracheotomy arose; at present there was plenty of room in the glottis during the day, but the stridor and dyspnœa were disquieting. In reply to a question by Mr. Barwell, Mr. Davis said that the patient in his second case had no difficulty in swallowing.

D. A. CROW said he noted that the patient in the first case of the group had difficulty in swallowing solids; but in cases of paresis the chief difficulty was in swallowing liquids; that fact had helped to differentiate between paresis and obstruction.

D. R. PATERSON said that the difficulty in swallowing solids has been said to be due to spasm of the crico-pharyngeus of the opposite side, and that in such cases as Mr. Mollison's the swallowing improved materially after the passage of a tube or a bougie. He had recently seen a man who had been

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knocked down in a motor accident two months before and was unconscious for five days with bleeding from the ear. The palato-laryngeal hemiplegia was still pronounced and his difficulty in swallowing was then limited to solids, which had to be washed down with a fluid.

Cases to illustrate the Discussion.

Palatal, Pharyngeal, and Laryngeal Paralysis, possibly due to Polio-encephalitis.—W. M. MOLLISON.

Male, aged 42, had sore throat and headache about 20th August 1931. No rise of temperature until a week later. Difficulty in swallowing solids; fluids tended to return through the nose.

On 12th September his voice was "nasal" and weak, and examination showed paralysis of left half of soft palate and left half of the pharynx, curtain movement. Much frothy mucus in deep pharynx; left vocal cord immobile. No paralysis of the tongue or of trapezius and sterno-mastoid muscles.

Paralysis of the Pharynx, caused by Tuberculosis of the Petrous Bone.—HAROLD KISCH.

A butcher, aged 33, complained of hoarseness and of deafness in the right ear of three years' duration. There was paralysis of the right vocal cord, and weakness of the right side of the palate, pharynx, and tongue and of the sterno-mastoid and trapezius muscles. There was a large polypus in the right external auditory meatus, and examination of tissue removed from the ear showed the presence of a giant-celled granuloma.

This case was shown at a meeting of the Section of Otology,* 6th February 1931, as an example of tuberculosis of the petrous bone.

Paralysis of the Pharynx, caused by Lymphadenoma.—HAROLD KISCH.

A man who complained of difficulty in swallowing, and of lumps in the neck. On examination, he presented a large mass of discrete glands on the left side of the neck, and a smaller mass of similar character on the right. There were no enlarged glands elsewhere, and the spleen was not enlarged. The left side of the palate, pharynx and larynx was paralysed, and there was also paralysis of the left cervical sympathetic, and loss of sensation in the sensory area of the left fifth nerve. The blood examination showed a secondary anæmia; Wassermann reaction, negative. The patient was seen by Dr. Symonds, who suggested that there were some intracranial deposits, such as occur in the spinal meninges in lymphadenoma. Treatment by intensive X-rays caused the glands to disappear, but otherwise his condition tends to deteriorate.

* *Proceedings*, 1931, xxiv., 969 (Sect. Otol., 67).

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Unilateral Paralysis of the Palate, Larynx, Pharynx, and Neck Muscles.—N. ASHERSON.

Female, aged 34, has been hoarse for a year. The right cord is immobile. The right side of the soft palate, the right half of the superior constrictor, the right sterno-mastoid and the trapezius muscles are paralysed. Palatal sensation is normal. The mucous membrane of the right pyriform fossa is of a yellowish-white colour from atrophy of the mucous membrane, which permits the cartilage to be seen through it. A skiagram of the mastoid is negative. There is no evidence of malignant disease or tuberculosis of the ear. A radiogram of the chest discloses tuberculous infiltration of both lungs. There is a chronic ear discharge. The patient subsequently succumbed to the chest condition, eighteen months after the onset of the hoarseness.

Palatal and Pharyngeal Paresis.—A. LOWNDES YATES.

Female, aged 44, suffered in July 1931 from tonsillitis. Fourteen days later she had difficulty in swallowing and in articulating words, which has persisted. Palatal and pharyngeal muscles are weak and there is weakness of arms. Skiagram shows that food enters larynx and nasopharynx during act of swallowing. Dr. Yealland considers the case to be one of myasthenia gravis.

Syringomyelia with Paralysis of the Right Half of the Soft Palate and Right Recurrent Laryngeal Nerve.—E. D. D. DAVIS.

A nurse, aged 36. First seen in April 1930, complaining of hoarseness, regurgitation of fluids through nose and slight dysphagia. The right half of the palate and right trapezius muscle are paralysed. The right vocal cord shows a complete paralysis of the recurrent laryngeal nerve. There is only slight movement of the left vocal cord.

Paralysis of the Left 8th, 9th, 10th, 11th and 12th Cranial Nerves.—E. D. D. DAVIS.

A man, aged 52, complained of loss of voice and hoarseness of ten years' duration. A left nerve deafness developed later. He has been under observation for four years and when first seen there was paralysis of all the cranial nerves named above. His only symptom is hoarseness and the condition has been stationary for four years. Wassermann reaction negative on many occasions.

Other Cases.

Squamous-celled Carcinoma of the Maxillary Antrum and Ethmoid. Operation: Deep X-ray Therapy. No Recurrence Five Years Later—W. M. MOLLISON.

Patient, aged 47, was operated upon in January 1924, for a growth in the right maxillary antrum. Section showed squamous-celled carcinoma.

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Two years later infiltration of the right orbit from ethmoidal recurrence. *Removal of eye and ethmoid. Deep X-ray therapy.*

Two Cases of Carcinoma of Maxilla—WILLIAM IBBOTSON.

Male, aged 50, had left-sided nasal discharge, with epistaxis for six weeks. A friable neoplasm filled the left maxillary sinus, and invaded the left nasal fossa, appearing also through a left upper molar socket. There was no bulging of the palate and no cervical adenitis. Microscopic examination showed carcinoma.

On 18th March 1931, the left maxilla was excised, when it was found that the disease extended outwards and backwards into the temporal fossa. The tumour invaded the left ethmoidal and sphenoidal sinuses, but not the frontal sinus.

Fifteen radon seeds were inserted on 25th April 1931, varying between 1·8 and 1·5 millicuries each, 10 seeds being left in for eight days and 5 for four days.

In July there were signs of some recurrence in the postero-lateral region, and on 24th July 1931, two needles, each containing 10 mgrms. of radium, were buried in the suspicious area by means of a wax plaque.

Female, aged 66, had right-sided epistaxis with swelling of right side of nose and adjoining portion of cheek, following an attack of erysipelas six months previously.

A neoplasm involved the floor of the right nasal fossa, the maxillary sinus, the nasal process of the maxilla and the ala nasi. There was adenitis in the right anterior triangle. The Wassermann test was negative.

Microscopical report was: "Solid trabecular, rarely tubular, mainly polygonal-celled carcinoma of maxilla. There is a tendency to squamous metaplasia and horn formation."

A partial resection of the right maxilla, with removal of some soft tissue, was performed.

On 7th August 1931, 60 mgrms. of radium were applied over the right cheek for three nights; 12·5 mgrms. packed into the right maxillary sinus for twenty-four hours, and 12·5 mgrms. packed into the right nasal fossa for twenty-four hours also.

Carcinoma of Superior Maxilla and Ethmoid—WALTER HOWARTH.

Female, aged 60, June 1921, complained of epiphora which began six months previously. Polypi had been removed from the nose at that date. There was an extensive growth involving the upper part of the lateral nasal wall and causing some bulging of the cheek.

28th June 1929.—Lateral rhinotomy. Partial resection of upper jaw and ethmoid.

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March 1930.—Some infiltration on palate suggesting recurrence. 6·5 mgrms. radium needles inserted. Patient remained well until June 1931, when there was some recurrence in the lateral nasal wall and in the labio-gingival fold.

22nd June 1931.—Nineteen 1 mgrm. radium needles were inserted for 3063 mgrm. hours—two into the lateral nasal wall, eight under the upper jaw, four into the cheek and five into the palate.

13th October 1931.—No recurrence at the present time.

Spheroidal-celled Carcinoma of Superior Maxilla—WALTER HOWARTH.

A. D., female, aged 68, first came to hospital May 1929, complaining of swelling of the right cheek, of five to six weeks' duration, with epiphora. Amputation of breast seven years previously.

June 1929—Partial resection of superior maxilla and ethmoid. 19th February 1930.—Small recurrence along alveolar border. Eight 1 mgrm. radium needles inserted for twelve days. Complete disappearance of recurrence.

Swelling over Left Superior Maxilla—A. L. MACLEOD.

Female, aged 19, history of swelling over left superior maxilla, of many years' duration and attributed to an injury. Seen two years ago. Dental cyst suspected and apparently confirmed by X-ray examination. On operation this was found to consist of hard cancellous bone.

DISCUSSION ON THE ABOVE FIVE CASES.

MUSGRAVE WOODMAN said that in cases of malignant disease of the upper jaw the surgeon had two duties:—(1) To cure the patient; (2) to dismiss him as a good-looking member of society. Formal removal of the upper jaw was an antique operation, especially as nine-tenths of the growths were not primarily in the upper jaw, but started in the ethmoid and extended radially. A growth which arose in the upper jaw, apart from the alveolus, was a rarity. Therefore every operation must be designed, and modified to suit the case. The design should allow for adequate exposure, ventilation and observation of the wound. When that was done, results were exceedingly good, better than most people thought. Recurrences took place, but they were easily controlled.

He wished to draw attention to the value of diathermy, which was likely to be neglected in the upper jaw. It was a safe and satisfactory method of dealing with extensions from the upper jaw which could not safely be attacked by other means. Radium had been tried extensively in the upper jaw, and he had had a serious experience of it nine years ago in the case of a growth which he excised. The growth was very virulent, and recurred within a month. He had put 50 mgrms. of radium in the upper part of the wound for five days, a procedure which, as was now known, should not have been carried out. The man recovered entirely and returned to work as a bank manager, at which he remained until two months ago. But during

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all that time radium necrosis was going on in his jaw, and it finally killed him, the floor of the skull having been eroded so that four inches of dura mater could be seen pulsating. Death was caused by meningitis. He (the speaker) used radium extensively for growths involving the skin of the nose and face with the object of causing a regression of the growth, to be followed later by an open operation.

A. B. PAVEY SMITH said that one of these malignant cases had a special interest. Squamous-celled growth was not a frequent variety in the antrum. Two years ago he had had a case of squamous-celled carcinoma, which was fungating out of the right nostril. The growth had filled the antrum, but was not connected with the lining ; it was growing from the vestibule. It was entirely abolished by diathermy and radium, without any removal of bone. The operation was carried out through the wide-open nostril. Radium needles of 10 mgrms. were pushed up under the lip and left in for seven days. There was considerable swelling of the ala nasi. There had been no sign of recurrence since. He had taken the precaution which he suggested should always be observed in operating in the region of the alae nasi, of tying the angular vein, because of the risk of sepsis causing cavernous sinus thrombosis.

DONALD ARMOUR wished to say a word in defence of that rapidly disappearing genus, the general surgeon ! He did not think that any up-to-date surgeon now resorted to the classical Ferguson operation for excision of the upper jaw in these cases. In conversation a short time ago, Professor Regaud, of the Radium Institute, Paris, said he was now resorting more and more to deep X-ray therapy in preference to radium in such cases as those shown by Mr. Mollison.

NORMAN PATTERSON referred to the importance of early diagnosis. In every case the sensitivity of the second division of the fifth nerve should be tested by means of cotton wool and a pin-prick. He had had a patient whose complaint was of slight pain at the side of his nose. There was an area of anæsthesia the size of a shilling, corresponding to the region of the neuralgia. On transillumination, the left antrum was clear. He sent the patient to be examined by X-rays, and the report was that the sinuses were normal. Six weeks later the patient returned with an enormous growth involving the antrum, and pushing the cheek forward on that side. It was a carcinoma. He (the speaker) was sure that this was the cause of the early nerve symptoms. Sometimes in these cases there was a loose tooth or localised hyperæmia of the gums, which might be the first signs of malignant disease.

Many years ago a man, aged about 40, came to see him on account of pain in the right frontal sinus region. On that side the antrum was dull, but puncture was refused by the patient. There was a sponginess and increased vascularity of the gum round one molar tooth. He was not seen again for a year, and then he had developed, in the neighbourhood of the same tooth, a "granuloma," which looked suspicious ; on section it proved to be a carcinoma. An operation was performed, and the patient lived only for nine months. Apart from the actual skin incision and division of bony structures, diathermy could be used all through the operation, *e.g.*, for dissecting up the cheek, dividing the mucous membrane of the hard

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palate, severing the soft from the hard palate. Such technique greatly reduced the bleeding. He used the diathermy button finally for going over the whole cavity.

J. F. O'MALLEY said that three years ago he had had a patient with carcinoma of the antrum and ethmoidal region. The left side of the nose was quite blocked. He (the speaker) punctured the antrum and removed a portion of the growth, believing it to be carcinoma. He then performed a more extensive operation, turning up the lip and exposing the antrum from the front, and removing the growth, afterwards going over the area with the diathermy button. He had seen that patient every three months since, and there had been no trace of recurrence.

F. C. W. CAPPS said the question arose of a biopsy before treatment was begun. He was aware that some objected to this, owing to the fear of dissemination, but at his hospital it was the custom to give one or two doses of deep X-rays as a preliminary to biopsy, to lessen the risk of dissemination. It was important to differentiate between these tumours, because sarcoma was not uncommon in the upper jaw. In cases of sarcoma probably no operation was needed, the results of deep X-ray therapy being excellent.

NORMAN PATTERSON said he believed that if a small piece of tissue was removed with the diathermy knife, it was unlikely that dissemination of cancer cells would occur.

W. S. THACKER NEVILLE said that one danger in connection with diathermy was secondary hæmorrhage. In his last case, that of a man aged 72, he had used the cutting diathermy knife to divide the skin and tissues (Moure's incision) and the coagulation current to seal the vessels. He removed half the hard palate. After opening the antrum, he had coagulated everything with the coagulation current. The patient suffered little shock, but two and a half months after the operation he suddenly died from secondary hæmorrhage from the antrum.

The PRESIDENT said that the first point which had emerged from the discussion was the value of deep X-ray therapy. The second was that no one set operation should be carried out in all cases in the first instance. The best course was to perform some operation to secure exposure and then to plan removal according to the individual case, either with the diathermy knife or by any other method of choice.

Adding a word on technique, he agreed that the incision under the eye should be avoided. It would be found that if the incision were extended straight down over the malar bone, as was done in the cases shown, two flaps could be turned upwards, and downwards, and by that means practically the whole jaw could be removed.

Ulceration and Scarring of Soft Palate and Pharynx.—JOHN F. O'MALLEY.

Male, aged 11. On 17th June 1931, he looked pale and ill; temperature 100·6° F. Membranous exudate on pharynx behind tonsils. Glands in neck enlarged. A swab examined for diphtheritic and Vincent's organisms was negative.

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A week later ulcers perforated the soft palate on each side of the base of the uvula, but a Wassermann test was negative. A fortnight later the tonsils were removed by dissection. Now the child looks well, the soft palate is adherent to the pharyngeal wall and there is very little respiratory passage leading to the nasopharynx. The Wassermann reaction is now positive.

HERBERT TILLEY said that the condition in this patient closely resembled those arising as a result of trauma. One of the worst of the kind he had seen resulted from enucleation of tonsils. This patient could, during the day, just breathe through a tiny hole behind the base of the uvula and leading from the nasopharynx into the mouth. Trouble ensued from the uvula obstructing the aperture at night, therefore it was removed and gave relief. In the child shown to-day any surgical procedure would be a failure, and only constitutional treatment should be carried out.

J. F. O'MALLEY (in reply) said that he agreed with Mr. Tilley. Years ago he had had experience of a similar case, and his effort to restore the passage into the nasopharynx had not been satisfactory. When the lesion had begun to develop the patient was acutely ill, and as it was unusual for inherited syphilis to take on acute manifestations in the form of sharp pyrexia and an active inflammatory area on the pharynx, he suspected diphtheria. He did notice the interstitial keratitis before the lesion in the palate appeared. The Wassermann reaction was at first negative, but later was proved to be positive.

Epithelioma of Soft Palate treated by Radium.—JOHN F. O'MALLEY.

Male, aged 71; 3rd May 1931, complained of sore throat of six months' duration. There was an ulcerated area, an inch long, at the junction of the anterior and posterior pillars of the soft palate, on the right side. No palpable glands in the neck. Microscopical report was epithelioma. Radium needles were inserted along the healthy margin of the ulcer, giving a dosage of 1320 mgrm. hours. Since then patient has had X-ray therapy on four occasions.

E. D. D. DAVIS said that epithelioma of the soft palate was very susceptible to radium, especially if small doses were applied over a long period. Good results were obtained in this type of case in Brussels by radium four years ago, but in spite of the good local result these patients developed glands in the neck a few years later.

MUSGRAVE WOODMAN asked how the radium was applied. He (the speaker) found that the best way in cases of epithelioma of the palate was to have a dental splint made, and to keep 1 mgrm. needles 3 mm. from the ulcer, and to place beneath the whole a lead shield to protect the tongue. There had been some cases of lingual ulceration arising from treatment of the palate by radium needles.

J. F. O'MALLEY (in reply) said he used seven small needles of radium, 0·6 mgrm., and 1·5 cm. long. He put the patient with the head in the extended position. He passed the needles from before backwards at the

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junction of the lesion with the sound skin. He then collected the threads and attached them to a catheter and brought the threads through the nasopharynx and nose. There was no inconvenience, and they remained in position ten days. From what he had heard of the effects of radium in the palate he did not feel too sanguine. He had treated such cases in the palate with diathermy with excellent results, but there were recurrences in the glands.

Post-nasal Hyperplasia, apparently Hereditary—F. C. W. CAPPS.

Girl, aged 11. First seen 9th October 1931. Complained of stuffiness behind the nose and deafness. Has had similar attacks since infancy; these have usually cleared after a few days. Present attack had lasted for ten days.

The condition was not improved after removal of tonsils and adenoids seven years ago. There was much nasal discharge after scarlet fever five years ago.

The family history goes back through the father, grandfather, and great-grandfather, although these appear to be the only members in their generation to be affected. The patient has three brothers older than herself and two younger, who also have stuffy noses which apparently have given more trouble since tonsil and adenoid operations. None of these members of the family have been seen.

On examination.—Post-nasal space completely filled with a rather firm mass which did not feel in the least like adenoid tissue. Teeth good; tonsils well removed. Much mucus in pharynx and in both sides of nose. Sinuses all clear on transillumination. No cervical adenitis. Patient has typical middle-ear deafness on both sides with a low limit of 64 D.V. on the right and 32 D.V. on the left.

H. V. FORSTER said that this little girl was a tolerant patient, and he had obtained a good view of the post-nasal space with the small mirror. The factor of deafness was important, and he thought that politzerisation should be carried out, as there was so much retraction of the tympanic membranes. Examination of the post-nasal space by palpation under anæsthesia seemed to be indicated if the nasal obstruction and deafness continued. This raised the interesting problem concerning palpation of the post-nasal space. He no longer made such an examination without an anæsthetic, and having suitable instruments ready could easily proceed to operation if necessary.

F. C. W. CAPPS (in reply) said the patient was examined under an anæsthetic. She had missed a great deal of schooling. She was in an acute infective state, and it would have been impossible to politzerise her.

Swelling on Tubercle of Epiglottis. Case for Diagnosis.—E. BROUGHTON BARNES.

Male, aged 44. Occasional hoarseness and pain on swallowing since Christmas, 1930.

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There is a brilliantly red, cone-shaped swelling on the tubercle of the epiglottis, immediately above the anterior commissure. The *Wassermann reaction is negative, and the sputum was negative for tubercle bacilli on three examinations.*

Sir ST CLAIR THOMSON said this case conveyed an important principle. The swelling on the petiolus, or tubercle of the epiglottis, was absolutely smooth, red and non-ulcerated. It might be a slight exaggeration of the normal condition, but he regarded it as physiological. The whole inside of the larynx was physiological, except for a little catarrh. What he deduced from this case was the importance, when there was slight hoarseness or dysphagia, of not being content with looking only in the ordinary places (the pharynx and the back of the larynx). When this patient phonated on a high "E" there could be seen a distinct, ulcerating deposit on the right, perhaps also on the left, lingual tonsil (this might explain the little congestion of the petiolus of the epiglottis). This patient's Wassermann reaction was negative, and there were no tubercle bacilli in the sputum; he felt somewhat suspicious that there was early malignant disease at the base of the tongue.

E. BROUGHTON BARNES (in reply) said that several members who examined the patient had told him that they agreed with Sir St Clair Thomson that the condition inside the larynx was physiological, though some said they had not seen anything like it before.

Specimen of a Right Subglottic Carcinoma in a Larynx removed nearly Five Years after the onset of Hoarseness.—T. B. LAYTON.

Male, now aged 69, was shown at the meetings held in May, June and November, 1927 (vide *Proc. Roy. Soc. Med.*, 1927-28, Vol. xxi., p. 299). The hoarseness had begun six months before he was seen in March 1927, when the right cord was pink and slightly swollen. In May 1927, laryngofissure was performed under local anæsthesia, but no evidence of disease could be recognised. By June 1927, the redness had partially returned, and by November 1927, the condition had returned to that of the previous March. The patient continued to be hoarse, but he did not return until June 1931, when he attended on account of difficulty in breathing. The right cord was irregular, immobile and infiltrated in its whole length. Tracheotomy was performed on 12th June 1931, followed by laryngectomy on 19th June, both under local anæsthesia. The larynx shows a mass which distends the subglottic region and an ulcer on which are one or two white warty masses. The growth is infiltrating the soft tissues outside the larynx between the thyroid and cricoid cartilages. Microscopical section shows it to be a squamous-cell carcinoma with keratinisation. The patient is also shown.

Sir ST CLAIR THOMSON said that when this case was first exhibited Mr. Barwell had rightly viewed it as being malignant, while he (the speaker)

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had hesitated between a diagnosis of malignancy and one of tuberculosis; he had also suggested even pachydermia. In the book written by Mr. Colledge and himself there were several references to these long histories of hoarseness and very slow evolution of intrinsic cancer. It was curious that Mr. Layton could not be positive as to its nature even when the larynx had been opened. Sir Henry Butlin said that there were three classes of cases of intrinsic cancer of the larynx:—(1) those which anybody could diagnose; (2) those which only a skilled laryngologist could diagnose; and (3) those which nobody could diagnose until the larynx was opened, and possibly not even then! This case was a warning that persistent hoarseness in a person of middle age, in whose case one could exclude syphilis and tuberculosis, should always be regarded as indicating potential malignancy.

Tuberculosis of Larynx.—ANDREW WYLIE.

Male, aged 34, complains of slight difficulty in swallowing, of four months' duration.

29th September 1930.—Voice rough. Complete fixation of left vocal cord with infiltration of left arytenoid cartilage and interarytenoid space. A small subglottic swelling seen under left vocal cord, and an enlarged gland on left side of neck.

No family history of phthisis, no cough. Evening temperature normal. No abnormal physical signs in chest. Urine normal. Sputum examined four times, with negative results.

22nd October 1931.—Patient has slight dyspnœa; left arytenoid has become œdematous; right arytenoid is also swollen.

Since the notes were written, slight consolidation has been diagnosed at both apices. Skiagrams did not help much. The case was sent to me as a malignant one, but I believe that it is tuberculous although there was no direct evidence of tuberculosis.

Laryngeal Case for Diagnosis.—E. A. PETERS.

Male, aged 62. Hoarseness of two months' duration.

There is a white nodule attached to the middle of the right cord. This nodule moves in and out of the glottis with respiration. The cord moves, but there is infiltration at the point of attachment.

Prominence of the Cartilages of Santorini and Wrisberg accompanied by Chronic Laryngitis.—E. A. PETERS.

Male, aged 40. The patient has complained of hoarseness for two years. On deep inspiration the pinnacles flatten out.

HAROLD BARWELL said he thought this was a case of congenital abnormality of the larynx. The laryngitis had largely subsided. He did not think that the condition described in the notes was the cause of the hoarseness. A little tongue of tissue ran from the right arytenoid eminence, passing in front of the left arytenoid. It was probably allied to some of the horns in that region in lower animals.

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Neoplasm of Larynx.—WALTER HOWARTH and W. A. MILL.

F. T., male, aged 49. First attended hospital 28th August 1931, complaining of hoarseness of four months' duration. *On examination* there was a large mass with a mulberry surface which appeared to be springing from the ventricle and resting on the left vocal cord. Judging from its movements, it appeared to be pedunculated. The movement of the cord was unimpaired. The Wassermann reaction was strongly positive, but the condition has not altered in appearance with antisyphilitic treatment.

Films of Syphilitic Stricture of Œsophagus.—WILLIAM IBBOTSON.

Male, aged 73. Had dysphagia, solids being swallowed only after walking about and eructating, whereas liquids and soft foods travelled into the stomach without difficulty. The symptoms were first noticed at Christmas 1927, at breakfast, when he suddenly felt a lump in the chest. Similar attacks followed, becoming worse each time and accompanied by pain described as "a digging out between the shoulders and also in front." There is a white patch on the tongue, which was first noticed thirty years ago, and reappeared intermittently up to fifteen years ago. Patient was treated with medicine. He denies syphilis. Radiography showed a tortuous stricture which, from its appearance, suggested syphilis rather than carcinoma. Wassermann test negative.

Œsophagoscopy on 19th May 1929, showed a tortuous stricture in the lower third, with much scarring above it. Gastrostomy was performed on 23rd May 1931, and seven gold radon seeds of 2 millicuries each were inserted into the stricture from above. By 5th June 1929, patient was able to swallow everything, except during attacks of spasm, which are not frequent. He still keeps the gastrostomy tube for safety and when last heard of was very well.

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