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Mr. SCOTT said that he had shown this patient (1) as an example of the beneficial results of the Ballance-Duel method of nerve-grafting for facial paralysis ; (2) because it illustrated certain points in technique, which, he claimed, simplified the operation and identification of the nerve-graft. Dr. Duel* had expressed the opinion that to ensheath the divided cutaneous nerve in a rubber tube which was left *in situ* for a fortnight would interfere with the rapid degeneration of its axis cylinder which he desired, but the successful recovery of the facial nerve functions demonstrated that there could be no such objection as Dr. Duel feared. The success was really due to Sir Charles Ballance's and Dr. Duel's procedures which he (Mr. Scott) had copied in all essentials.

ABSTRACTS

EAR

On the response to stimulation of the cupula. K. WITTMAACK. (*Arch. Ohr-, u.s.w., Heilk.*, 1935, CXXXIX., 1-13.)

Steinhausen's experiments on the cupula of the pike have caused widespread interest. In some quarters these experiments have been quoted as a proof of the correctness of the theories of Mach and Breuer which postulate movements of the cupular end-organ in response to physiological stimulation. The author points out that these claims have no justification whatever.

In Steinhausen's experiments an opening is made into the membranous labyrinth. As a consequence, a " closed " system of fluids is converted into an " open " one. For technical reasons it is impossible to study the cupula without making an opening into the membranous canal, because this end-organ cannot be rendered visible unless some staining material is introduced first.

It is not surprising that movements of the cupula can be observed once an opening has been made and the fluids can circulate freely. In the normal " closed " state mass movements of the endolymph fluids are impossible, although the transmission of pressure variations does take place. Steinhausen admits that the side-to-side movements of the cupula in response to pressure alterations are more easily obtained in freshly killed animals than in the living. Wittmaack sees in this observation a proof of the existence of the " turgor ", or state of tension of the whole cupular structure, which is such an essential feature of his own theory. As soon as the endolymph canal is opened the cupula swells up because of the

* Stockholm, September, 1934, Meeting of Collegium Oto-Rhino-Laryngologica.

release of pressure, and one is no longer observing an organ which is physiologically intact.

Steinhausen's researches may throw some light on the minute structure of the cupula, but they have no value in the elucidation of the normal stimulus response, as an entirely artificial condition has been introduced.

J. A. KEEN.

Diagnostic factors concerning herpes zoster oticus. RALPH A. FENTON, Portland, Oregon. (*Jour. A.M.A.*, August 18th, 1934.)

The pathogenesis of herpes zoster is no longer considered to be a ganglionitis alone, but rather an ascending or descending infective process due to a specific filterable virus with definite serum reactions and antibody production. Signs and symptoms in addition to vesicle formation include pain, enlarged lymph nodes, loss of local tactile sensibility and facial paralysis. Vestibular and auditory symptoms may precede the eruption by several days or may appear simultaneously. Three cases are reported in some detail which show, first, a very mild superficial affair simulating an eczema; secondly, the furious, severe type with meningeal symptoms but with little local annoyance in spite of very extensive skin lesions in several nerve areas; and, thirdly, dermal manifestations resembling erysipelas followed by facial palsy and severe mastoid pain. Myringitis bullosa lacks the characteristic pain of zoster and shows no skin vesicles. Increased susceptibility is noted in syphilitic, leukæmic, arteriosclerotic and senile individuals. The management is symptomatic. Ultra-violet irradiation is very helpful in shortening the duration of the pain and, after the congestive stage is passed, diathermy may be used. Locally, dry, open treatment with non-irritating powders or quick drying antiseptics will obviate secondary infection. Cocainization of the sphenopalatine region is helpful in cutting down pain and vertigo during the period of geniculate ganglion swelling. The middle ear should be left severely alone unless suppuration develops.

ANGUS A. CAMPBELL.

Prenatal medication as a possible ætiological factor of deafness in the new-born. H. M. TAYLOR. (*Archives of Otolaryngology*, xx., No. 6, December, 1934.)

There are ten million deaf persons in the United States, of whom three million are children. Over five thousand deaf children have been examined by the National Research Council, and 62 per cent. have been classified as congenitally deaf. Syphilis plays only a small part in the ætiology. The possibility of damage to the ear of the fœtus by drugs which have been administered to the mother

has hardly been considered by the otologist. Such drugs as quinine, the salicylates and alcohol are known to have a selective action on the auditory nerve, which may actually cause irreparable pathological changes in the fœtal cochlea, as the permeability of the placenta to drugs is well recognized. In reviewing the literature of the subject the writer has found reports of eighteen fœtal deaths attributed to the prenatal administration of quinine to the mother. During the 1918 influenza epidemic otitis media was rare, but there was a great increase in the incidence of congenital deafness, and this the writer attributed to the free use of quinine and salicylates at that time. In the Southern States the incidence curves of malaria and of congenital deafness are so similar as to suggest some common factor, such as quinine administration.

The reason why prenatal medication has been ignored as a cause of deafness in the new-born is that a diagnosis of deafness cannot be made until the child is two or three years old.

The subject deserves investigation and is just as important as enquiry into family history of deafness, consanguinity or syphilis. Due attention to the subject may elucidate the ætiology of a number of obscure cases of deafness in children. Further research demands the co-operation of the biochemist, the pathologist, the obstetrician and the otologist.

In the discussion following the paper, Foster gave statistics of the causes of deafness in one hundred and fifty-one congenitally deaf children ; ten cases were attributed to the use of quinine.

Reaves gave details of replies to a questionnaire from fifty-eight mothers of congenitally deaf children. During pregnancy 17 per cent. had used quinine, 18 per cent. tobacco, 8 per cent. acetylsalicylic acid and 3 per cent. alcohol, all of which drugs or toxins might have affected the fœtal ear.

DOUGLAS GUTHRIE.

NOSE AND ACCESSORY SINUSES

Sinusitis in Children. CECIL CANTOR. (*Medical Journal of Australia*, i., No. 1, January 5th, 1935.)

The writer draws attention to the prevalence of sinus infection in children, despite the scanty literature on the subject. No less than 67 per cent. of his patients at the Children's Hospital in Melbourne were found to have sinusitis. The children who " always have colds " are nearly all suffering from sinusitis. Far too often the mention of nasal discharge and obstruction leads to removal of tonsils and adenoids, and after this operation there is little or no improvement. The discharge in sinusitis is mucopurulent and crusts may form, but atrophy and true ozæna are rarely seen.

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Radiography is useful but proof puncture of the antrum is the only certain means of diagnosis. The writer does not agree with the commonly accepted idea that removal of adenoids and tonsils will cure most cases of sinusitis in children. Many cases of sinusitis are primarily allergic in origin and further investigation of the factor appears to be desirable. It is doubtful whether bacteriological investigation is of much assistance in the diagnosis and treatment. Otitis media is a frequent complication of sinusitis and may even dominate the picture. Conservative treatment will cure the majority of cases, and consists in the use of a mild alkaline nasal douche followed by the instillation of 20 per cent. argyrol. As a rule puncture and lavage of the antrum must also be practised on one or more occasions. Operation for permanent intranasal drainage is seldom necessary. Treatment of the antrum will bring about a cure of the milder ethmoidal infection which is so often present, and ethmoidal curettage is rarely required. Attention to general hygiene is of the first importance. Fresh air, sunshine, cleanliness and tonic treatment will assist the normal defensive mechanisms. The infectious nature of the malady must always be kept in mind.

DOUGLAS GUTHRIE.

LARYNX

The recurrent laryngeal nerves in total ablation of the normal thyroid gland. DAVID D. BERLIN. (*Journal of Surgery, Gynæcology and Obstetrics*, January, 1935.)

The author discusses the risk of injury to the recurrent laryngeal nerves in the operation of total ablation of the thyroid gland, as performed for advanced cardiac disease, and brings forward several new and interesting facts concerning their anatomy.

A study is made of the position of the nerve from the result of seventy complete thyroidectomies and also from the dissection of seventy cadavers, i.e. 140 nerves in each case.

The author found that in 65 per cent. of cadaver dissections the nerve lay safely in the tracheo-œsophageal sulcus, the only position which is described in anatomical text books. Ten per cent. were found to penetrate part of the inferior aspect of the lateral lobes, and 25 per cent. to traverse the normally adherent region between the gland and the trachea in the region of the second and third tracheal rings. In these last two situations the nerve is vulnerable and careful dissection is needed. The findings at seventy total thyroidectomies confirmed these *post mortem* observations: in a few cases the nerve was not identified and was assumed to be lying safely in the tracheo-œsophageal sulcus, but in most cases the nerve was exposed and, if lying in a vulnerable position, was dissected free.

Further, it was shown that the right recurrent nerve may be a centimetre distant from the trachea at the level of the lower pole of the gland, but that the crico-thyroid articulation is a useful surgical landmark, as in all cases the nerve passed posterior to this articulation. On both sides it was found that the nerve sometimes took up a position anterior to the inferior thyroid artery, or passed between its terminal branches, both vulnerable positions; this happened more often on the right side than on the left.

Grossly anomalous positions of the nerve are fortunately rare. The right recurrent nerve may be given off from the vagus high up in the neck and, instead of hooking around the subclavian artery, may pass longitudinally behind the carotid artery to the lateral border of the thyroid gland, where it would be in a vulnerable position. This anomaly is associated with maldevelopment of the aortic arch and, consequently, of the subclavian artery.

Berlin does not find histological evidence for Crile's assertion that the recurrent laryngeal nerve is unduly sensitive to trauma, but says that in his experience permanent paralysis is due to ligation or section. He stresses the importance of laryngoscopic examination both before operation and during the operation, after the removal of one lobe. The spoken voice cannot be relied upon as a proof of the integrity of the recurrent laryngeal nerves and, if vocal cord paralysis occurs after extirpation of one lobe, then the operation is ended because of the serious consequences which follow bilateral nerve section.

The article is well illustrated by diagrams.

T. D. DEIGHTON.

Congenital Stenosis of the Larynx. RICHARD W. WILKINSON, Washington, D.C. (*Jour. A.M.A.*, May 26th, 1934.)

The writer reports the case of a girl aged seven years who had always spoken in a whisper that could not be heard farther than one foot. She had frequent attacks of dyspnœa, easily elicited by excitement, or a slight infection of the upper respiratory tract. In infancy she did not cry normally and had frequent attacks of severe dyspnœa to the point of cyanosis. Her Wassermann reaction was negative. Direct examination revealed an atresia of the free borders of the vocal cords anteriorly, which reduced the glottis to half its normal size. Attempts to pass a bougie were unsuccessful, so the cords were separated to the anterior commissure by a median incision. During convalescence it was necessary to incise the adhesion and pass a bougie. While there is still a slight atresia anteriorly, the child now cries aloud, has a normally audible, though husky, speaking voice, and has had no dyspnœa since the first operation.

ANGUS A. CAMPBELL.

Abstracts

TONSIL AND PHARYNX

Gargling and Throat Irrigation. WILLIAM SNOW and J. E. STERN, New York. (*Jour. A.M.A.*, September 15th, 1934.)

For these observations patients used a thin liquid suspension of barium sulphate while lateral X-ray views of the head and neck were made. The methods used included (1) violent gargling, (2) gentle gargling and (3) tilting the head backwards as far as possible, without gargling. A study of the films showed that with all these methods the tongue is firmly pressed against the soft palate in such a position that the liquid cannot reach the anterior faucial pillars. Occasionally if the subject interrupted the procedure to take a breath a small stream of the mixture leaked backward and had to be swallowed.

Further observations were made in which gravity irrigation was used with the head and neck flexed. The fluid ran from a container placed 18 inches above the mouth, through a length of rubber tubing and a narrow irrigating tip. Study of these films showed that the hypopharynx, oropharynx and nasopharynx were thoroughly irrigated and frequently some of the fluid ran out of the nose.

The writers believe that gargling is ineffective and should be replaced by gravity irrigation.

ANGUS A. CAMPBELL.

The Tonsils, their Functions and Indications for their Removal. L. W. DEAN, St. Louis. (*Jour. A.M.A.*, October 6th, 1934.)

A study of the tonsil problem requires a consideration of all the lymphoid tissues of the pharynx. The tonsils and other lymphoid structures of the throat are part of the subepithelial lymphoid tissue of the body. The lymphoid structures are integral parts of the pharyngeal mucous membrane, and do not differ from lymphoid tissue in the alimentary tract. The tonsils possess no afferent lymphatic vessels and consequently the lymph stream must always flow from the periphery to the mass. The palatine tonsils, which have long bifurcated crypts, are particularly well fitted for the retention of débris and are outstanding sources of infection. The lymph follicles of the lingual tonsils have short crypts and are less often a focus. There is no agreement among physiologists as to the function of the tonsils. They are said to produce lymphocytes, to react against stimulants and to produce auto-immunization. Certainly they develop after birth and continue to function until after puberty, when involution occurs. The writer believes that the tonsils in infancy and early childhood are a part of the defence mechanism of the body. Consequently the tonsils should not be removed before two years of age. The operation in infants is always

more serious than later, though adenoids which block the naso-pharynx may be removed at any time. Practically, the removal of tonsils is always a gamble. Even if they are infected they are not necessarily the focus of systemic disease. The surgeon should be influenced by the opinion of the internist and by a history which connects the tonsil with the systemic disease. The tonsil plays a much more important rôle as a source of infection in children than in adults. Removal is indicated when there is infection of neighbouring structures such as the middle ear, nasal sinuses, and the glands of the neck, especially the jugulo-digastric lymph gland. Quiescent tuberculosis of the tonsil is much less frequent than it was twenty years ago but may be associated with tuberculous glands of the neck. Large tonsils and adenoids which cause mechanical obstruction to breathing should be removed. Doctors, dentists and nurses present more indications for removal of tonsils than those less exposed to infection, and the writer feels that the routine removal of tonsils in probationers is a justifiable procedure. Removal of tonsils definitely decreases the incidence of scarlet fever, common colds and otitis. It decreases somewhat the incidence of rheumatic fever, arthritis, chorea and heart disease in children, but seems to increase the incidence of laryngitis, bronchitis and pneumonia. Study in the laboratory has shown definite evidence of infection in the most innocent looking tonsils. So far the writer has not seen any permanent deleterious effect following the tonsil operation.

ANGUS A. CAMPBELL.

ŒSOPHAGUS AND ENDOSCOPY

The Congenitally Short Œsophagus. LOUIS H. CLERF and WILLIS F. MANGES, Philadelphia. (*Jour. A.M.A.*, June 16th, 1934.)

The writers have observed fourteen cases of congenitally short œsophagus with stenosis and the presence of a portion of the stomach in the thoracic cavity. In this group were four children and ten adults. Two children, a brother and sister, were in the same family. Symptomatically they were divided into two groups. In the first, the outstanding symptoms were dysphagia and regurgitation, with disturbances in nutrition and growth. In the other group, distress, particularly after eating, was noted in addition to dysphagia, with retention of food and regurgitation. Dysphagia and difficulty in swallowing were complained of for long periods, even from infancy. Weight loss was particularly noticeable in the children and on one child of eight a gastrostomy had been performed because of extreme emaciation. Symptoms varying from indigestion and flatulence to severe epigastric pain were frequently noticed.

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The essential points in the X-ray diagnosis are : First, a portion of the cardiac end of the stomach must be shown to stay above the level of the diaphragm. This is characterized by the presence of multiple longitudinal rugal markings. Second, the œsophagus must be shown to be too short to reach as low as the level of the diaphragm. Change of position will not cause that portion of the stomach above the diaphragm to go either lower or higher and there is no variation in relations on repeated studies. If it is to be viewed as a hernia of the stomach through the diaphragm, the term " congenital fixed " or " congenital irreducible " should qualify the term hernia.

The portion of the stomach above the diaphragm is larger than the œsophagus and will show its true diameter only when that portion below the diaphragm is well filled. All the cases showed some degree of narrowing where the œsophagus joins the stomach and no collection of air or gas was found in the stomach, either above or below the diaphragm.

The common findings by direct examination were, chronic œsophagitis, dilatation of the thoracic œsophagus, and narrowing of the œsophagus opposite the fourth rib. The lumen was practically always concentrically placed and lacked the distorted appearance commonly noted in cicatricial stenosis. Superficial ulceration at the point of stenosis was a common finding. Below the stenosis the lining appeared to be stomach mucosa, and this was confirmed by biopsy in eight cases.

Satisfactory results were procured in the non-ulcerative cases by a proper selection of food, thorough mastication and the occasional passage of a bougie. Various combinations of alkalies and topical applications of 10 per cent. silver nitrate with passage of bougies were found to be useful in the ulcerative cases.

The article is illustrated and has a bibliography.

ANGUS A. CAMPBELL.

Difficulty in Swallowing in Acute Epidemic Poliomyelitis. M. B. BRAHDY, Mt. Vernon, N.Y., and MAURICE LENARSKY, New York. (*Jour. A.M.A.*, July 28th, 1934.)

Among 123 patients with bulbar poliomyelitis admitted to the Willard Parker Hospital in 1933, eighty-seven had difficulty in swallowing. Five of these cases are reported in considerable detail. The condition varied in severity from simple nasal regurgitation of short duration, to complete inability to swallow up to seventy-one days. The former was due to paralysis of the soft palate while, in the latter, it seemed to result from paralysis of the mylohyoid or other muscles associated with the second stage of deglutition. Paralysis of the muscles of the glottis and larynx were accompanied

by hoarseness and coughing, especially when food was inspired into the trachea. Older patients showed a greater incidence of impairment in swallowing than younger ones, but the majority of patients were able to swallow normally in a week. The ultimate prognosis as regards inability to swallow is good.

The article is illustrated, has three tables and a bibliography.

ANGUS A. CAMPBELL.

The Dangers of Local Anæsthesia and Suggestions for Their Prevention. B. GRIESSMANN. (*Arch. Ohr-, u.s.w., Heilk.*, 1935, CXXXIX., 109-20.)

Whenever the ordinary hollow needles with bevelled-off points are used in tissues there are certain mechanical problems which require consideration. If the point of a hypodermic needle were circular it would be useless for the purpose of injecting local anæsthetic solutions. The result of inserting it through skin or mucous membrane would be to punch out small circles of tissue with consequent blocking of the lumen. As regards the bevelled needle points, every time that these advance through the tissues a small flap is cut, which in size and shape corresponds to the sharp edges of the flattened-out point. This " flap " may become detached and it may lodge in the lumen of the needle. Later on it may be swept out again with the anæsthesia solution. On its way through an infected area a needle may thus pick up a small collection of bacteria or a piece of septic thrombus. If the needle point then becomes arrested in the lumen of a vein and the injection is made, a septic infarct, e.g. in the lung, is readily explained.

The so-called " aspiration test " is no safeguard. By means of a diagram the author shows how the " flap " cut out of the wall of a small vessel can prevent blood being sucked into the needle and no warning is given. When the injection is then made the novocain solution may flow directly into the circulation with serious consequences.

A new type of hollow needle has been made to the author's design, which is said to avoid these dangers. The bevelled-off point is closed in front, the opening being placed at the side as near to the tip as possible. Dr. Griessmann is in favour of needles with a fairly large diameter, at least 1 mm. With these needles the technique is somewhat different. The needle is slowly advanced while a negative pressure is maintained (see previous abstract describing special type of syringe). If no blood appears in the syringe the region traversed may be considered to be free from blood vessels, and the injection is made as the needle is withdrawn over the same area.

J. A. KEEN.

Abstracts

MISCELLANEOUS

Bacteriological Investigation into the significance of the Nasopharynx in Catarrhal Infections. A. SIMONIS. (*Arch. Ohr-, u.s.w., Heilk.*, 1934, cxxxviii., 217-26.)

In the literature the ætiology of catarrhal infection of the throat and respiratory tract centres around the nose and the accessory sinuses. The author believes that insufficient attention has been paid to the nasopharynx and the adenoid tissue which it contains. In his opinion, the bacterial contents of this space are of greater significance than those of the anterior nares.

Dr. Simonis has designed a special applicator (see illustration) which enables him to collect a swab from the nasopharynx without any possible contamination from the mouth cavity. The number and variety of organisms grown from the nasopharynx are compared with those grown from the anterior nares, both in people suffering from acute catarrhal infections and in healthy " controls ". Almost invariably the nasopharyngeal swabs show a greater bacterial content in the healthy subjects and a greater increase in the number and variety of organisms in cases of acute infection, than the nasal swabs. The tables in the text bring out this point very clearly. J. A. KEEN.

Agranulocytosis (Malignant Neutropenia). R. F. RIDPATH. (*Archives of Otolaryngology*, xx., No. 6, December, 1934.)

Agranulocytosis or " malignant neutropenia " is a comparatively recent disease and it comes within the sphere of the laryngologist on account of the accompanying pharyngitis. The fact that over 80 per cent. of the patients are women and that the onset of the disease synchronizes with the menstrual period suggests that some disturbance of sex hormones is responsible, but it may occur also in males and at all ages. Profound malaise and prostration with slight fever may be present for some time before any local lesion appears. The local lesions are superficial white or grey ulcerations in the mouth, on the palate, tongue or tonsils. The blood picture decides the diagnosis. There is a marked neutropenia, the total leucocyte count being under 2,000, and even as low as 200. In a small number of cases the blood culture is positive, but the nature of the infecting organism is variable. The diagnosis is simple; leucopenia is not found in acute tonsillitis, in Vincent's angina, or in streptococcal sore throat, but it may result from the use of certain drugs which contain the benzene radical, such as arsphenamine, amidopyrin and salicylic acid. Treatment is unsatisfactory. Transfusion is of no avail. Stimulation of the bone marrow by X-rays may be tried unless the marrow is aplastic. The writer suggests that thymic extract may prove useful. Details are given of two fatal cases. DOUGLAS GUTHRIE.

Miscellaneous

The Present Status of Radiation in the Treatment of Cancer. [Clinical Lecture at Cleveland Session.] ARTHUR C. CHRISTIE, Washington. (*Jour. A.M.A.*, September 29th, 1934.)

The treatment of cancer is still empirical and the term " radiocurability " is suggested rather than " radiosensitivity ". The single massive dose method has been practically abandoned, and great harm with little probability of additional benefit has been done by repeated irradiation without change of dosage. The use of gold and platinum seeds has been a great advance over glass seeds for the interstitial application of radon. There has also been improvement in the use of radium element in needles by increasing the filtration to at least a millimetre of platinum and by using smaller needles, to minimize trauma. It seems quite certain that the results in cancer are due to the amount of radiant energy that can be delivered to the cancer cells without permanently injuring the normal structures, and that voltage *per se* is of no importance. There are now indications that further advance may be made in Röntgen apparatus by securing a much greater energy output by the use of tremendously higher milliampèrage rather than by an increase in voltage. Radiation has become the primary method instead of being used as an adjunct to surgery. Wide dissection and removal of regional glands has been replaced by radiation treatments of the primary growth, Röntgen and interstitial irradiation of regional nodes and, perhaps, surgical removal of glands which persist after such treatment. The basal cell type of cancer, when the growth is small and does not involve cartilage or other important structures, is readily curable by complete local destruction by the Röntgen ray, radium or electrothermic methods, or by excision. The fractional method of Coutard constitutes an epoch-making advance in dealing with lesions involving cartilage ; and growths about the eye, ear, nose or larynx may be completely destroyed while the normal tissues are saved from irreparable damage. Squamous-celled epithelioma, on account of its early invasion of lymphatics and distant metastases, is a greater menace to life. Trauma or excision of the local lesion is therefore a dangerous procedure. Whatever method is chosen to destroy the local lesion, the primary treatment should be thorough Röntgen irradiation of the entire lymphatic drainage area by the fractional method. The writer believes that the method of choice in treating the local lesion is a destructive dose of Röntgen rays or surface application of radium administered at one sitting, about the time when the series of treatments is begun over the regional lymphatics. Six weeks after such treatment, enlarged lymph nodes may have disappeared and the original lesion may be healed. If there is any residuum of the primary lesion it can then be destroyed by electro-coagulation or by implanting gold or platinum radon seeds or small needles of radium element

interstitially. Any lymph nodes that remain palpable may be laid bare by careful incision and radon seeds or radium needles implanted. A single small squamous-celled tumour may exhibit several grades of malignancy in different parts, and this is of importance, not only in the prognosis, but also in the treatment. The first indication in all cases of cancer in the oral cavity, including the tongue, is to give a thorough Röntgen irradiation by a fractional method over both sides of the neck from the sub-maxillary to the supraclavicular regions. This will occupy a period of at least three weeks, during which time efforts should be made to clean up imperfections. Reports of radium and Röntgen treatments indicate that from 20 to 35 per cent. of cures may be expected in all cases. Squamous-celled carcinoma of the tonsil, even with glandular involvement, is no longer a hopeless disease. Lymphosarcoma and the so-called lympho-epitheliomas of the tonsil are very radiosensitive, and their complete regression, along with any glandular extension, may be secured by relatively small doses of Röntgen irradiation. Results obtained by external irradiation, by the prolonged fractional method, are so favourable in cancers of the larynx that radical operation may be avoided in the future. Radiation has made little headway in malignant bone tumours, osteogenic sarcoma, or carcinoma of the bronchus, œsophagus and gastro-intestinal tract.

ANGUS A. CAMPBELL.

OBITUARY

MR. T. JEFFERSON FAULDER

THE death of Thomas Jefferson Faulder has occurred within a year of the time that he ceased to be a member of the active staff of the Throat Hospital in Golden Square. Faulder had devoted such unsparing and unselfish work to further the interests of the Throat Hospital, where he was senior surgeon for many years, that by the unanimous wish of his colleagues the Committee of Management willingly agreed to extend his period of office by three years, when he reached the age of sixty, and though failing health began to show evident signs he continued his work and his interest until May, 1934. He then retired altogether and died of uræmia on March 20th, at the age of sixty-three.

Although he became no outstanding figure in Laryngology, Faulder brought a broad education and an unusual intellectual equipment to the study of specialism. He was educated at St. Bees in Cumberland, and at Clare College, Cambridge, he studied classics and obtained a first-class in the classical tripos in 1893. He