

## ABSTRACTS

### EAR

*On the Withdrawal of the Cerebro-spinal Fluid by puncturing the Cisterna Cerebello-medullaris.* KROISS, OTTO, and DIELMANN. (*Münch. Med. Wochenschrift*, Nr. 30, Jahr. 73, S. 1227.)

The technic adopted by the authors in puncturing the cisterna cerebello-medullaris is as follows:—

In men the hair is shaved downwards from the *linea nuchæ*; in women it is sufficient to shave a small triangular field. Half a c.c. of novocain-suprarenin is injected beneath the skin over the spine of the epistropheus. The patient lies on the left side. The needle is inserted over the middle of the spine of the epistropheus. The puncture needle, which is 1.5 mm. thick, having been forced through the skin by a forward thrust is driven obliquely towards the occiput. Care is taken to maintain the needle in the mid-line, and it is gradually advanced towards the margin of the occipital foramen. The *membrana atlanto-occipitalis* is now encountered, the resistance which it offers to the passage of the needle being generally recognised. The well-controlled needle is carefully advanced until this resistance is overcome. It is at most a question of a few millimetres. The mandarin is now removed.

After piercing the first resistance, a second is sometimes met with, which imparts a peculiar tough, inelastic sensation. This is caused by the sinus or eventually by the epidural veins which occur here. If the mandarin is removed whilst the needle is fixed in this second resistance blood is obtained. If the second resistance has been pierced one obtains cerebrospinal fluid, the first drops of which are sanguineous. If both resistances are overcome in one movement and the mandarin is not removed until its point is free—this imparts a distinct sensation—clear fluid only is obtained. Owing to the varying and undeterminable depth at which the cistern lies, it is both impracticable and dangerous to try to reach it by inserting the needle for any given distance in any special direction.

The amount of fluid withdrawn for pathological investigation is 5 c.c., but the authors have removed 38 c.c. without untoward result. In pathological states the authors find that the fluid withdrawn by lumbar puncture is relatively richer in cells and gives a stronger albumin reaction than that obtained by cistern puncture.

The patients are directed not to lie down after puncture. Ambulatory patients who do not follow a strenuous occupation are told to continue at work.

Post-operative disabilities, such as they had commonly experienced

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after lumbar puncture, were very rarely encountered. There is no after-pain, and the stiffness in the neck, which sometimes occurs, only lasts for a day or two.

Whilst admitting that the danger of injuring vital organs is greater than when carrying out lumbar puncture, the authors think these dangers have been overrated. There has been one death in 2000 recorded cases. Every possible danger is detailed with precision. There is no contra-indication to cistern puncture. It is superior to lumbar puncture in cases of brain tumour. In such cases it is also superior to ventricle puncture. The experience gained by the authors in 101 cases of cistern puncture convinces them that it is a better method of withdrawing the cerebrospinal fluid than lumbar puncture. Two points of practical importance are, that it allows us to tap neurotics and to withdraw fluid in ambulatory patients.

The technic, experience and opinions of other authorities are freely quoted. There is an extended list of references and an anatomical illustration to demonstrate the line of insertion of the needle.

J. B. HORGAN.

*Cistern Puncture in Children.* DONALD STEWART. (*Edin. Med. Journ.*, January 1927.)

This simple means of obtaining fluid from the subarachnoid space has been largely employed during the past few years. The present paper deals with the possibilities of the method in children, and describes a series of 127 punctures in 32 children under 12 years of age: 17 were cases of meningitis and 15 were punctured for purposes of diagnosis.

The technic is easy and safe, and as a rule no anæsthesia is required. The needle is entered just above the top of the spinous process of the axis vertebra and pushed forward in line with the external auditory meatus, until at a depth of 1.5 to 4 cm. the point is felt to be gripped by the occipito-atlantoid membrane. The stylet is then withdrawn and a flow of fluid indicates that the cistern has been punctured.

There were no harmful sequelæ in the present series. In three cases only blood was withdrawn, but subsequent puncture was successful.

The procedure is contra-indicated when the cistern is likely to be occluded or obliterated, as in cerebral tumour or in advanced meningitis. Cistern puncture is of value in the diagnosis of meningitis, and especially in tuberculous meningitis, tubercle bacilli being found in the cisternal fluid at an early stage.

It is also superior to lumbar puncture in treatment of acute meningitis by drainage and by serum injection. Good results have been

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reported from the employment of triple puncture—ventricular, cisternal and lumbar—for drainage and for the introduction of serum.

In certain cases fluid may be obtained by cistern puncture, where lumbar puncture has been unsuccessful. DOUGLAS GUTHRIE.

## THE NOSE AND ACCESSORY SINUSES.

*An Investigation of the Functions of the Nose in Health and Disease.*

KARL HELLMANN. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, Bd. xv., pp. 1-68, Nov. 1926.)

This lengthy article contains a very full review of all previous researches into the functions of the nose in relation to respiration (124 references), also much original experimentation with numerous illustrations, tables, and diagrams.

In a first part Hellmann studies the pathway that the air takes through the nose. His own method of investigation is to study a stream of liquid which flows through the nose and imitates the stream of air. A human head which is bisected to show the nasal cavities is moved to and fro just under the surface of some water contained in a large basin. On the water is sprinkled a powder (lykpodium) which is easily visible and can be photographed. As the water flows from the nares to the choanæ and in the reverse direction, certain whorls and circular movements are set up and the currents are rendered visible by this powder; several fairly convincing photographs are shown. The author assumes that these currents are the same as will be set up in the air of the nasal cavities during respiration. In the main his conclusions agree with previous investigations undertaken in different ways, particularly with tobacco smoke and clay models of the nasal cavity.

During inspiration two main circular whorls occur in the neighbourhood of the anterior ends of the inferior and middle turbinates. These differ in their relation to each other, when the nose projects horizontally or when it is tip-tilted. During expiration these whorls are not seen, and the streams of fluid run in several parallel lines. Turbinal hypertrophy can be imitated by sticking pieces of wax on the turbinate bones, and the effect of an obstruction is usually to create further circular whorls at these points.

The second part of the paper is a clinical study of nasal obstruction. The author makes use of the well-known mirror test for studying the permeability of either nasal chamber. For the flat mirror, however, he substitutes a roller with the same highly polished surface. If this is placed close to the nostrils and fairly rapidly turned during expiration, two long strips of moisture appear; the strip corresponding to the obstructed side is at once seen to be narrower and to have a less heavy

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deposit of moisture, than the one corresponding to the freer side. When these "strips" are examined a little more closely, one can always observe little bulgings and narrowings which occur in regular sequence. These signify an increase and weakening of the expiratory current synchronous with the heart-beats. During systole the lungs fill with blood and their volume increases; some air must be displaced to allow for this expansion; the reverse happens in diastole. Another factor which has to be considered is the volume of the nasal mucosa which fluctuates for the same reason.

Then follows a series of experiments to measure the pressure inside the nasal cavities during the various phases of respiration; an olive is fixed in the nostril and connected with a manometer or with a Marey's capsule, if records are wanted. The curves can be correlated with graphic records of the thoracic and abdominal respiratory movements.

The third part of the article is headed: Warming of the respiratory air in the nose. A delicate thermopile is used for measuring the temperature of the air in various regions of the nasal cavity. This instrument can be calibrated beforehand by dipping it into watery solutions of known temperatures. During inspiration there is a small excursion of the galvanometer needle, a larger one during expiration. A "chart" is given in which are indicated the approximate temperatures in the various regions of the nose.

Lastly, the author deals with the gaseous exchanges which may take place. These experiments require elaborate apparatus and precautions to exclude any alveolar air. The air can be drawn out of one nostril with the other open, while the subject phonates in order to shut off the nasopharynx; or a special spatula is used to keep the soft palate raised. Some of the experiments were carried out on patients who had total laryngectomy performed. Here, of course, it is easy to separate the respiratory from the nasal air. It is very clearly shown that carbon dioxide is given off from the nasal mucous membrane. Although the total amount is negligible as compared with the  $\text{CO}_2$  exchange in the alveoli, actually per square cm., the nasal mucosa is said to be seven times more active in this respect than the alveolar endothelium. It appears that a certain amount of oxygen can also be absorbed by the blood circulating in the capillaries of the nose. We are reminded that respiratory processes of this type occur in the mucous membrane of the nose, throat, and œsophagus in certain lower animals, and are a well-known phenomenon in comparative physiology.

Another very important gaseous exchange is that of water vapour. It is generally assumed that the air becomes fully saturated with water vapour before it reaches the lungs. This was tested on much the same lines as the  $\text{CO}_2$  content. The air, after chemical extraction of all the water, was drawn in at one nostril and collected at the other. About

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26 grams of water become added to 1 cubic metre of air as it passes through the nasal chambers; this falls short of the maximum possible saturation by about one third.

Certain pathological conditions were also tested, particularly o $\ddot{z}$ æna; here the CO $_2$  and oxygen exchange is much diminished, but curiously enough the water saturation is not much interfered with, the water being abstracted from the crusts and from the secretions. If the nose is thoroughly cleaned of crusts and secretions before the experiment, or if the condition is one of pure atrophic rhinitis without secretions, then the amount of water vapour which becomes added to the respiratory air is very much less.

J. KEEN.

*The Sorrows of the Septum.* W. JOBSON HORNE. (*Brit. Med. Journ.*, December 1926.)

Epistaxis is peculiar to the human race and the site of the hæmorrhage is in the vast majority of cases on the cartilaginous septum at a spot where there is a very free anastomosis of the terminal twigs of the vessels supplying the septum. Developmental irregularities leading to the formation of spurs and deviations are vascular in origin. In 80 per cent. of European skulls the septum is irregular, while in the lower types the reverse is the case.

The operation of submucous resection has become a fetish and the end-results are not so good for the patient as for the surgeon. The operation is extremely difficult when it is most needed. The author had had excellent results from Moure's operation which preserves the rigidity of the septum.

T. RITCHIE RODGER.

*Septic Hæmatomata of the Nasal Septum. Their Bilateral Formation and Relation to Erysipelas.* P. BERTEIN. (*Archives Internationales de Laryngologie*, November 1926.)

The bulk of this paper is an inquiry into the causes of the bilateral character of hæmatomata of the septum. Two cases are adduced, one of traumatic and the other of non-traumatic origin.

The view that the bilateral character of the exudate is due to a fracture of the septum nasi and the permeation of the blood through a fissure, is not accepted by the author. He considers that the accumulation of blood on the two sides takes place too rapidly to fit in with this hypothesis. For the same reason, he cannot accept the view that the permeation takes place through an area of cartilaginous necrosis.

The assumption of the above theories is that the septum is an impermeable barrier which requires a fracture or necrosis to allow of pathological exchanges. In point of fact, however, a loose space is present between the lower part of the septum and the incurved extremities of the lateral cartilages of the nose, through which effusions

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can pass from one side to the other. Moreover, the perichondrium of the septum proper is in continuity with that of the lateral cartilages, and it is in the subperichondrial layer that hæmorrhage takes place.

M. VLASTO.

*Two Factors in Catarrhal Deafness—The Lower Turbinate (Technic) and The Sphenoidal Sinus (Anatomy).* GREENFIELD SLUDER, M.D., St Louis. (*Journ. Amer. Med. Assoc.*, Vol. lxxxvii., No. 22, 27th November 1926, p. 1799.)

The author describes his procedure for destroying soft tissues of the posterior tips of the turbinates by means of galvanic cautery. The operation is done through the mouth, the field being visible by means of retraction of the palate and by use of the post-nasal mirror. One incision is made under the tip, another above, and a third incision is made in the middle and prolonged until it faces the Eustachian tube. It is claimed that this procedure is superior to the use of the cold snare. Dr Sluder has performed this operation on hundreds of cases, and claims it to be very helpful in certain conditions of Eustachian obstruction. He also refers to the sphenoid as a factor, especially when the cell is prolonged into the pterygoid process and, when infected, can irritate the tube. The article is illustrated by four cuts showing the method for dealing with the turbinate, and by two for the anatomy of the sphenoid.

ANGUS A. CAMPBELL.

*The Relation of Paranasal Sinus Infection to Disease of the Lower Respiratory Tract.* W. V. MULLIN, M.D., Cleveland. (*Journ. Amer. Med. Assoc.*, Vol. lxxxvii., No. 10, 24th September 1926.)

In order to show the relationship between sinus infection and chest infection, the author performed experiments on animals using rabbits for the maxillary sinus, and cats for the frontal. India ink was used for injection. After the course of the lymphatics was established by deposits from the india ink, an emulsion of tubercle bacilli was injected. Necropsies were performed from a few days up to seventy days. It was found that the lymphatic absorption from the nasal sinus was by way of the submaxillary and the internal jugular nodes, the lymph ducts, the great veins, and the lungs. The bronchi and mediastinal glands were also involved. The infectious material followed the same route. In no cases were the tonsils infected. Clinically the submaxillary, deep cervical, retropharyngeal, or mediastinal nodes are noted during infection. Enlargement of the last may produce cough.

Of the paranasal infection the most important is the hyperplastic type. This may produce three types of lung infection, (1) acute bronchitis; (2) bronchial asthma; (3) chronic bronchitis and bronchi-

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ectasis. The first mentioned is probably merely coincident; the second may be due to secondary peribronchial infection, protein sensitisation, or reflex; frequently the primary cause is hyperplastic ethmoiditis with polypi; complete surgical removal of the hyperplastic tissue is indicated. The third type is due to protracted flooding of the lymph channels with infectious material which produces a chronic peribronchitis. Frequent chest colds may be the first evidence of extension. The association of sinus disease with bronchiectasis is far too common to be accidental. Typical cases start in childhood and give a history of frequency of protracted colds often dating from measles or whooping cough. The obvious lesson is early recognition and treatment of sinus disease in children. Other causes of bronchiectasis such as lung abscess, foreign body, and fibroid phthisis, must not be overlooked.

ANGUS A. CAMPBELL.

### *The Question of Air-Emboli after Puncture of the Maxillary Antrum.*

HANS KEY-ÅBERG, Linköping. (*Acta Oto-Laryngologica*, Vol. viii., Fasc. 1-2.)

Brown Kelly, in 1914, published records of a number of cases of dangerous symptoms after puncture of the antrum of Highmore, but Reider Gording, by means of animal experiments, did much to solve the problem of the cause of the symptoms. He published two papers on the subject in the *Acta Oto-Laryngologica* during the years 1920 and 1921.

A series of symptoms is common to all cases, and as a rule they follow air-injection after puncture of the antrum.

During the course of the air-injection, or immediately afterwards, the patient collapses with suppressed respiration and sudden cyanosis. It had been taught that a trigeminus reflex, cocain or adrenalin poisoning or air-embolus were possible causes.

Gording has satisfactorily established in animals that air-embolus is responsible for the symptoms, but admits that the actual proof of air-embolus in man has not been definitely made out. The author, however, publishes a case in which during recovery he was able by means of the ophthalmoscope to observe transient embolism of the central artery of the retina.

One concludes, therefore, that it is advisable to abolish every kind of air-injection in puncture within the nasal cavity.

H. V. FORSTER.

### *A New Technic in the Röntgenography of the Nasal Accessory Sinuses.*

MAXWELL MALTZ. (*Laryngoscope*, Vol. xxxiv., p. 550.)

In this method, the cassette with double screens is elevated at an angle of 23 degrees. The patient's head is placed in such a position that the nose, both lips of the open mouth, and the chin touch the

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plate in the centre. An ordinary sinus cone is used and the anode of the tube is placed directly over the central part of the vermilion border of the upper lip. The cone is placed snugly over the head.

This position has the following advantages: (1) the antrum is stabilised and placed nearer the plate, (2) the shadow of the petrous temporal is below and behind the antrum and never clouds the lower part of the antrum, (3) the sphenoidal sinuses are visualised below and behind the thin horizontal portion of the palate bone.

The author describes another position as an auxiliary to his new method. In this, the sphenoids and outer angle of the antra are shown concomitantly. A number of X-ray pictures illustrate the paper and comparisons are made with pictures taken in the Water's position. The pictures undoubtedly demonstrate an important advance in nasal accessory sinus photography.

ANDREW CAMPBELL.

*Block Anæsthesia of the Maxillary Nerve through the Sphenopalatine Foramen.* H. HEERMANN. (*Münch. Med. Wochenschrift*, Nr. 43, Jahr 73, S. 1793.)

An examination of forty-two skulls has shown that the sphenopalatine foramen always lies above the posterior end of the middle turbinal and that to reach it from beneath the turbinal in the manner suggested by Sluder, whilst it is often impossible, always requires an unusual amount of technical skill. By the help of a specially constructed angular needle (Fisher-Freiburg) it is easily and safely possible to reach the foramen above the middle turbinal. By making a superficial injection it is possible to obtain good anæsthesia of the whole of the second branch of the trigeminus.

J. B. HORGAN.

*Osteomyelitis of the Frontal Bone as a Complication of Frontal Sinusitis.* ALBERT E. BULSON, Jr., M.D., Fort Wayne, Ind. (*Journ. Amer. Med. Assoc.*, Vol. lxxxvi., No. 4, 23rd January 1926.)

The author reports a case of osteomyelitis of the left frontal bone. A male, aged 20, received a comparatively mild blow beneath the left eyebrow. Within a few hours there was localised headache, swelling at the root of the nose extending up to the hairline, chemosis of the conjunctiva, temperature 100, pulse 120, and white cell count 12,400. The patient and his relatives refused radical operation, so a deep incision was made the following day, and also one week after. Culture showed a pure pneumococcus. The condition did not clear up, the wound discharged pus, and there were several sequestra. X-ray showed extensive involvement of the frontal bone. Two months after the onset a radical operation was permitted. A large amount of diseased bone was removed, exposing a considerable area of the dura mater. This operation was a success, following which the patient made a good recovery.

ANGUS A. CAMPBELL.



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*Large Pharyngeal Diverticula.* E. I. SPRIGGS, M.D., F.R.C.P.  
(*Brit. Med. Journ.*, 18th December 1926.)

Two cases are here recorded of large pouches of long-standing which had not been operated upon. In the first case the condition had existed at least 38 years and the patient had led a continuously active life, without loss of weight. He had adopted by experience a method of attention to the pouch which assured him a remarkable degree of comfort. The second case was of 16 years' duration, but for 4 years he had lost ground through inability to take sufficient food. It was then found that he could swallow better when lying forward on his right side, and after adopting this posture he held his own as regards weight.

T. RITCHIE RODGER.

*Acute Retropharyngeal Abscess in Childhood.* DOUGLAS GUTHRIE, M.D., F.R.C.S.E. (*Brit. Med. Journ.*, 18th December 1926.)

Two varieties of retropharyngeal abscess are recognised—those of spinal and those of lymphatic origin. The former type is comparatively rare and is associated with caries of the cervical vertebra, the concomitant symptoms of which render the diagnosis easy.

The acute abscess of lymphatic origin is more common but more insidious in onset and more likely to escape diagnosis. Untreated it almost invariably ends fatally, but when recognised and opened, the prognosis is good. The anatomical relationships of the prevertebral fascia are described in detail, and attention is drawn to the group of glands present in infancy in the space of Gillette between the fascial and mucous layers, these glands being in direct communication with the posterior carotid chain. The infection of these glands may sometimes be tuberculous, as in two of the author's cases, but the streptococcus is the organism usually found. The infection probably most frequently passes from the tonsil, and infected tonsils have been present in 80 per cent. of cases. Trauma and middle ear suppuration may also be exciting causes. A table is given showing the age incidence, the symptoms, and the end-results of the author's 20 cases. Difficulty of breathing is the predominant symptom, the reason being that the abscess tends to point just above the level of the upper limit of the larynx, which in children is situated relatively high up. The diagnosis is most easily confirmed by palpation; but this must be done with care as death has ensued in some cases, and all preparations should already have been made for opening an abscess if found. The abscess should be opened from the mouth, the external operation being reserved for the abscess of spinal origin.

No anæsthetic should be used; the child should be laid on his side, wrapped in a blanket with the arms fixed; a gag is inserted and a pair of long sinus forceps plunged into the most prominent part of

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the swelling. The operation must be done quickly as the use of the gag may arrest respiration by pressing the abscess against the larynx. At the moment of opening the child is turned on his face with the head slightly dependent. T. RITCHIE RODGER.

*An Unusually Large Abscess in the Posterior Wall of the Hypopharynx caused by a Foreign Body.* C. VON EICKEN (Berlin). (*Zeitschrift für Hals-Nasen- und Ohrenheilk.* Band xiv., Heft 1 and 2, p. 60.)

A man, aged 85, presented himself with difficulty in breathing and complete inability to swallow beginning four days previously. There was marked bulging of the posterior wall extending into the aryepiglottic folds. The X-rays showed the swelling of the soft parts in front of the vertebrae but no foreign body. The œsophagoscope revealed a mass of meat in a decomposing condition which was removed with slight relief. Next morning the dyspnoea and dysphagia were as bad as before, but on repetition of œsophagoscopy a white foreign body—piece of bone from a goose—projected into the tube and was easily extracted. Steady recovery ensued without it having been necessary to open the abscess from the outside.

JAMES DUNDAS-GRANT.

*Concerning the Occurrence of Streptococcus hæmolyticus in the Pharynx and on the Tonsils of apparently Healthy People.* HANS RICHENMILLER. (*Munch. Med. Wochenschrift*, Nr. 50, Jahr. 73, S. 2117.)

The examination was carried out upon five different groups of individuals.

- (1) 206 pupils in an enclosed convent in which scarlet fever had occurred sporadically for a considerable time.
- (2) 80 poor-house children in Augsburg who had not displayed any particular form of illness.
- (3) 110 apparently healthy pupils in different trade schools in Munich.
- (4) 17 people on the staff of the institution in which the examination was undertaken.
- (5) 100 nose and throat patients from whom nose and throat swabs had been submitted for diphtheria investigation.

Groups 1, 2, and 3 were first examined once, after which those members of group 1 and 2 that had given a positive result were re-examined.

Of the 413 healthy individuals in the first four groups 9 per cent. gave a positive result. The individual group percentages were:— (1) = 7.7 per cent.; group (2) = 16.2 per cent.; group (3) = 7.3 per cent.; group (4) = 5.8 per cent. Of group (5) 26 per cent. gave a positive

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result. Patients with angina and well-marked membranous deposit simulating diphtheria had apparently these streptococci present with greater frequency than positive diphtheritic organisms.

Individuals from a region of recognised scarlet fever infection did not appear to be specially predisposed.

Of the 38 healthy carriers it was possible to re-examine 30 (group (1) 16, group (2) 13, group (3) 1); of these it was found that in 11, or 36 per cent. (group (1) 5, group (2) 5, group (3) 1), the streptococcus hæmolyticus was repeatedly found. The growth of this streptococcus in the pharynx can continue for weeks, months, or perhaps years. Eleven, or 2.5 per cent., of the 413 healthy individuals examined displayed this persistent growth.

J. B. HORGAN.

*Irradiation of Diseased Tonsils.* J. COLEMAN SCAL. (*Med. Journ. and Rec.*, Vol. cxxiv., p. 873, 1st December 1926.)

This article describes a new method of treating tonsillar hypertrophies by means of removable Platinum Radon Seeds, giving detailed reports of a series of cases where tonsillectomy was for different reasons contra-indicated, and illustrating the application of the technique to varying pathological conditions.

To carry out the application of the seeds, a new implanter is used which is illustrated and described in the article.

As the pain of implantation and removal is practically *nil*, at no time is any anæsthetic required, there is no need of hospitalisation, nor disability of any kind. The total absence of shock is a great advantage in inoperable cases.

By means of the implanter the operator is able to place one removable Radon seed in the centre of a tonsil so that radiation is distributed equally throughout. The Radon seed used is filtered by 0.3 mm. of platinum. This filtration cuts off the caustic Beta-rays, thus doing away with all possibility of burning with consequent necrosis and sloughing.

When the instrument is withdrawn after implantation the seed is left imbedded in the tonsil with a 2 cm. length of thread protruding from the portal of entry. This short thread does not in any way inconvenience the patient, nor cause the slightest interference with function. At the end of four days the seeds are easily removed by grasping the thread with forceps.

The point of the trocar is so fine and the seed so small that very little trauma is done to the tonsil.

The amount of radiation can be measured with accuracy and the applicators located with such exactness as to ensure equal and complete distribution throughout the tissues. Only one treatment is necessary,

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a fact much appreciated by the patient. Systemic reactions of any kind never occur. The attached thread, making the seed easily removable when its period of service is over, does away with an objectionable foreign body being left in the tissues, a drawback to the bare tube method. The author concludes that in the implantation of removable Platinum Radon Seeds we have at present an adequate substitute for tonsillectomy in those cases where surgery is, for any reason, contra-indicated.

The technique and method described in the article have been developed by Mr Joseph Muir of New York.

AUTHOR'S ABSTRACT.

*On Cysts and Cystic Tumours in the Nasopharynx.* A. TERBRÜGGEN.  
(*Zeitschr. für Laryngologie, Rhinologie, etc.*, Bd. 15, Febr. 1927, pp. 227-245.)

The article begins with a review of the complicated embryology of this region. In the roof of the stomatodeum, just in front of the primitive oral plate two small outgrowths occur.

(a) One is Rathke's pocket which grows upwards and forms the anterior lobe of the Pituitary; the connection sometimes persists as a craniopharyngeal canal through the body of the sphenoid bone (found in 0.3 per cent. of adult skulls).

(b) The other is the bursa pharyngea also called Seesel's pocket. It burrows somewhat into the basi-occipital and seems to have some relation to the extreme anterior end of the notochord. Around this depression arises a collection of lymphoid tissue which we later called adenoids.

In connection with Rathke's pocket there have been described congenital nasopharyngeal hypophyses, also cystic tumours of the meningocele type with a persistent craniopharyngeal canal. A case is quoted where such a cyst has been removed as an adenoid mass and the child died of meningitis.

However, the more common variety of cystic tumours in the nasopharynx arise from the pharyngeal bursa (Tornwaldt). When this is well developed we can recognise it as the median recess of a typical adenoid mass. Two clinical cases are described and very numerous and full references are given.

J. A. KEEN.

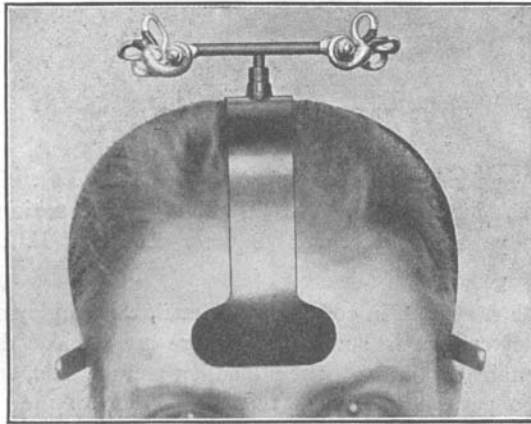
## MODELS OF THE LABYRINTH.

*King's College Hospital Pattern.*

By A. H. CHEATLE, C.B.E., F.R.C.S., and V. E. NEGUS, M.S., F.R.C.S.

THE models have been made for purposes of investigating labyrinthine diseases and for teaching students. They are double the natural size and are made of Wood's fusible metal, which is sufficiently strong for ordinary purposes; the ampullary ends are painted in different colours in order to make them conspicuous.

It is easy to make reproductions of the semicircular canals and cochlea from one petrous bone, and to construct models of the labyrinth, if accuracy is not desired. But the intention of the present writers has been to produce a model which would be properly orientated.



As previously described in the *Proceedings of the Royal Society of Medicine*, the method used was to fix a hollow tube between the internal auditory meatuses of a dry skull, and to hold this tube in place by means of a rigid frame, clamped by bars on to the side of the skull in such a way that the lower edge of each bar coincided with the Frankfort plane; that is to say, the plane of the upper margin of the bony external auditory meatus and the lowest point of the orbit. Metal was run through the oval window of one side to fill the cochlea and semicircular canals of that side, thence passing along the hollow tube to the opposite labyrinth which was also filled, the hollow tube being rigidly held in place by cement.

The next step was to remove the bone and to extract the complete model in one piece. The casting presented considerable technical difficulties, which were overcome by Mr Shaw, who managed to produce an intact model at the Royal Dental Hospital. Enlargements were then made to double size, not by a modelling machine, as had been hoped, but by freehand work. The models were made in silver by Mr Thomas, Seal Engraver and Medallist, who exercised extreme care in getting the details accurate and the orientation of the canals perfect.

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Having secured the enlarged model, it was then necessary to arrange for reproduction in mass. This again caused considerable delay, as it was difficult to find anyone who could undertake the work. Success has been attained however by Messrs Gerrard, Furriers and Naturalists, who made, in Wood's metal, piece moulds and casts of the two labyrinths together. The original frame was made by Messrs Mayer & Phelps, who have constructed head frames with a pointer to lie parallel with the Frankfort plane in such a way that, when the frame is on the head, the labyrinth lies in correct orientation in all respects. The patient's head can then be put into any position and the exact relations of each of the canals are seen; rotation and caloric tests can be carried out with the frame in position. It must be remembered that there may be slight variations in the inclination of the canals in individual skulls.

The whole apparatus of enlarged models and head frame can be obtained from Messrs Mayer & Phelps, 59 New Cavendish Street, London, W. 1.

## REVIEWS OF BOOKS

*Surgery of Neoplastic Diseases by Electrothermic Methods.* By GEORGE A. WYETH, M.D. (New York). With 137 illustrations. Oxford University Press, Warwick Square, London, E.C. 4. 1926. Price 38s.

This book describes, in considerable detail, the employment of the high-frequency current in surgery, and there are sections dealing with its use in certain conditions of the bladder, rectum, skin, and so forth. The first 100 pages are devoted to a description of the current, the special apparatus employed for its production, its action on the living tissues, and the methods adopted in the treatment of malignant growths. Of the remaining 187 pages about half the space is taken up with the consideration of lesions of the upper food and air passages which appears to show that in America electrical methods are relatively more frequently used in these regions than in other parts of the body. However, diathermy is strongly advocated for the treatment of carcinoma of the breast and rectum. In the case of the bladder, approach to that organ is obtained by an operation through the abdominal wall carried out by aid of the "endotherm" knife.

The treatise opens with a preface by Dr Howard A. Kelly, in which he refers to the "endothermy" of Wyeth in the following terms:—"A principle new in these several particulars. He has developed an instrument by which he can rapidly secure electro-desiccation and electro-coagulation of the tissues with a cold needle and without carbonisation; he has also worked out a method of using a cold needle which effects an instantaneous molebar disintegration and so replaces