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President—MR. FRANK A. ROSE, F.R.C.S.

Large Fibrous Tumour in the Deep Regions of the Face. (Subsequent upon Fracture of the Skull.)—PROFESSOR G. PORTMANN, M.D., and E. D. D. DAVIS, F.R.C.S.

The removal of face tumours by operation when performed sufficiently early gives a percentage of success superior to all other methods. But it is necessary for success that the development of the neoplasm must not have gone beyond the limits compatible with a complete extirpation. These tumours are very often insidious and neither the patient nor the doctor perceives their presence until their extension is considerable. Surgery, fortunately, extends its field of action more and more every day, and operations which a few years ago appeared impossible, can to-day be performed without insurmountable difficulty.

Colonel M., aged 42, had an accident five years ago, which resulted in a fracture of the base of the skull (not verified by X-rays) with nasal and pharyngeal hæmorrhage; since then his health has been good with the exception of nasal obstruction without headache.

He was examined for the first time in London on 22nd April 1930, and a growth in the left nasal fossa was diagnosed. This growth seemed to be very large and appeared to be inserted at the level of the postero-superior part of the nasal fossa. On 14th June 1930, an operation was performed by E. D. D. to remove the tumour by the endo-nasal route with the raspatory and snare. The attachment of the tumour was particularly firm and excessive hæmorrhage prevented a continuation of the operation. Then Moure's lateral rhinotomy was performed, and in spite of very severe hæmorrhage a great portion of the tumour was removed; its total removal was, however, considered to be impossible. The report on the specimen sent to the laboratory for a microscopical examination was that the growth was "a fibroma with a tendency to sarcomatous transformation."

On 31st July 1930, 9 mgrms. of radium were inserted into the tumour and left for five days, and the dose was repeated on 23rd August for the same time. The result of these two applications was bad; the patient suffered from a violent reaction and the tumour continued to grow rapidly. It was possible to see at that time that a process of the tumour had penetrated into the right nasal fossa

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through a perforation of the septum, a sequela of a submucous resection done in India. An intranasal antral operation had also been performed.

9th October 1930, removal of the tumour with the diathermy knife was attempted, but it was too deeply fixed at the level of the lateral wall of the nasal fossa and in the choana, as well as the naso-pharynx. The removal of the tumour again failed.

On 6th December 1930, diathermy-coagulation was tried without result.

It was at this time that the patient came to Bordeaux, where he was examined by me on 30th December 1930. During this examination it was possible to see that the nasal fossae were completely obstructed by a hard immobile resistant mass. The nasopharyngeal cavity was also completely filled and the soft palate was pushed forward. The patient could not breathe through the nose. There was no headache. Transillumination and X-rays showed dense opacity at the level of both nasal fossae, maxillary sinuses and ethmoidal cells.

In spite of the extension of the tumour, it was decided to attempt to remove the growth rapidly and completely, as it was the only possible way of curing the patient.

Operation.—Was performed by Professor Portmann under cholo-form on 12th January 1931.

As soon as the patient was anæsthetised an inter-crico-thyroid laryngotomy was performed. When the Butlin-Poirier tube was inserted, anæsthesia was continued with the Ricard apparatus during the remainder of the operation.

Two routes of approach were used, the external and the buccal.

1. *External Route.*—Incision along the latero-nasal groove from the internal canthus to the nostril. The ala was detached and all the anterior part of the bony nasal fossa was exposed. This step was made with scissors, and the elevation was difficult on account of the cicatricial tissue, resulting from the former operation. On account of the extension of the tumour into the maxillary sinuses, and its firm attachment, one was obliged to make a subpalpebral transverse incision on the left at a right angle to the first incision, which completely exposed the maxillary bone. After the bony opening made during the last operation was enlarged, the greater mass of the tumour was almost completely exposed in the left nasal fossa and antrum. The left process of the tumour was separated and mobilised at the level of its external and inferior part. Inside the tumour seemed to be a part of the septum, which was actually destroyed at the level of the posterior two-thirds. Through this breach the right nasal fossa was almost filled by the neoplasm. The adhesion of the tumour at the level of the external wall seemed to indicate its penetration into the right antrum, which was later found to be completely filled by the tumour. The tumour was set free,

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not without difficulty, downwards and at the level of the palate, and laterally at the level of the right and left antrum. The same liberation was attempted upwards, but the tumour at that point was adherent and seemed to have penetrated into the cranial cavity. The removal of the superior part of the tumour appeared dangerous and a way through the mouth to that part situated in the nasopharynx was looked for.

2. *Buccal Route.*—Division of the soft palate in the median line to the posterior edge of the hard palate. This incision gave a free way to the nasopharynx, and also permitted a verification of the extent of the tumour at this level. With the finger an attempt to move it was made. It was free on the right side, but it was firmly adherent to the left wall. Then an extirpation with forceps was attempted by buccal traction, whilst, with an elevator, its detachment was made easier through the trans-maxillo nasal route. But the tumour was too firmly fixed and the forceps suddenly gave way. Then, little by little, the tumour was detached by manipulation through both routes, and after half an hour's effort it moved and came off gradually by a downward and upward movement, and also backwards and forwards. The adhesions seen at the superior part had still to be set free. At this level it was necessary to proceed cautiously, for it was understood that the neoplasm had to be separated from the dura.

The tumour was removed *en bloc* through the naso-facial opening. Its bed then appeared to be enormous and the destruction of the facial and cranial skeleton was considerable. In brief, it completely filled the nasopharynx; descended behind the soft palate and filled the two nasal fossae, having destroyed the middle third of the septum, both antra, all the superior part of the nasal fossae, with the internal wall of the left orbit, both the sphenoidal sinuses with the body of the sphenoid, then it involved the cranial cavity at the level of both the ethmoidal bones and both cribriform plates. At this level the tumour formed a cavity the size of a small egg, which extended backwards to the optic chiasma. Gauze impregnated with vioform was packed into the operation cavity, and one end of the gauze was brought out through the left nostril. The skin incision was carefully sutured.

In spite of the seriousness of the operation, the postoperative result was excellent and the patient was able to leave the clinic on 14th February 1931, completely cured. He returned to India on 28th April fit for military duty. There was no facial deformity apart from an almost imperceptible scar at the side of the nose.

The pathological examination of this tumour showed that it was a fibroma, a few areas of which might lead one to suspect the commencement of a sarcomatous degeneration.

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After these verifications it is evident that the development of the tumour and its localisation might have brought on in the near future a bilateral blindness, by compression and destruction of the optic chiasma, and possibly death from meningitis or cerebral compression.

1. *From a clinical point of view* there were all the characteristics of a fibroma of the nasopharynx. The insidious growth and the hardness of the tumour, the absence of infiltration of the lateral walls of the nasal fossa, the severe hæmorrhage and the good general health of the patient. One is, however, accustomed to consider the fibroma of the nasopharynx, which Sébileau has perfectly defined under the term of the bleeding fibroma of male puberty, as a benign tumour developing in adolescence. It is thus extraordinary to find ourselves in the presence of a case of fibroma of the nasopharynx considering the age of our patient. In addition, it must be noticed that no spontaneous hæmorrhage was produced during the growth of the tumour. Its site on the other hand was quite different from the site of a fibroma which we remember as always attached to the roof of the choanal canal. In the case of our patient, the tumour was attached to the anterior wall of the sphenoid and to the posterior superior wall of the nasal fossa. For these reasons, it seems then we have to deal with a fibroma of nasal origin and not a fibroma of the nasopharynx.

The growth of the tumour and its extension as proved at the operation also merit some thought. It is really extraordinary that such an extensive destruction of the facial skeleton can take place without the patient perceiving it, for, as can be proved by the specimen of the tumour, the space necessary to hold such a tumour corresponds to the real hollow in the facial skeleton, the cutaneous covering of which became a simple mask. The intracranial invasion also is particularly impressive.

In facial tumours, the invasion and the intracranial penetration occur most often, either on a level with the sella turcica, after the absorption of the sphenoidal sinus or in front, on a level with the cribriform plate or of the postero-superior wall of the frontal sinus, when the neoplasm has an intranasal extension. In this case, the anterior penetration was complete whilst its backward extension was imminent as the sphenoidal sinus was already completely invaded.

Most often the diagnosis of the intracranial invasion is facilitated by the appearance of a certain number of symptoms peculiar to endocranial tumours. Without wishing to give a detailed account, I shall mention some of these classical signs which are usually divided into general symptoms and localising symptoms.

(a) *General symptoms*, still called diffuse symptoms, have nothing to do with the localisation of the tumour. They simply signify intracranial hypertension.

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They are: *Headache*, persistent, intense, and deep-seated, which classical writers consider as constant. It is most often seated in the frontal region in tumours of the anterior fossa, but the headache can, however, occur at a distance, occipital for instance, or occupy the whole of the skull. The headache is continuous, with frequent paroxysms.

Vomiting occurs without effort, especially on awakening in the morning, when the patient changes from a lying to a standing position. It is rare in tumours of the anterior fossa of the skull.

Early optic neuritis, with simple vascular signs or congestion followed by œdema of the papilla succeeded by atrophy.

Disturbance of the intellect, which is considered frequent, in tumours of the anterior fossa. The patient is sad, indifferent, dull and stupid. This is the *slow cerebration* as described by English writers; or else he shows instability of temper, becomes irritable, and weeps and laughs without cause.

Modification of the pulse and respiration. Slowing of the pulse and modification of the respiratory rhythm are also signs of intracranial hypertension.

It is important to state in the case of our patient, that the superior wall of the two nasal fossae on a level with the cribriform plate and the superior wall of the two ethmoids was destroyed, and the tumour had been able to penetrate the skull and push up the frontal lobes, forming a cavity the size of a small egg, without any of the symptoms we have just enumerated. Headache in particular, which is classically considered as constant, was absent during the whole evolution of the illness, and this agrees with what one of us (Portmann) has often proved and which was the object of a communication to the French Society of Oto-Neuro-Ophthalmology in 1929, namely, the infrequency of headache in cerebral tumours, while it always exists in cerebral abscess.

(b) *Symptoms of Localisation.*—When the localisation of a tumour at the anterior fossa of the base of the skull is concerned, one expects implication of the first two cranial nerves.

1. *Olfactory nerve* irritated at first will react by hyperosmia or parosmia, succeeded by anosmia.

Injury to the olfactory nerve could not be ascertained in this case, the presence of the tumour in the two nasal fossae mechanically prevented a functional examination, but a period of excitement of the olfactory nerve under the form of hyperosmia was not noticed in this case.

2. *Optic nerve*, the injury of which immediately shows itself by a diminution of visual acuity. In this patient's case the sight was absolutely normal, but on operating it was easy to see that injury to the chiasma was imminent, and the patient would soon have been completely blind without any premonitory symptoms.

Our case is then similar by the silence of its intracranial evolution

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to that of Hallade, in which the intracranial tumour was discovered at the post-mortem examination, the base of the skull being perforated, 4 cm. on a level with the right sphenoidal sinus. The sella turcica, the basilar apophysis and the sphenoid bone were destroyed. The brain was adherent to the opening. No symptom, however, had shown itself during his life.

From an Ætiological Point of View.—In what measure may a connection be established between the cause and effect, between the fracture of the skull and the development of the tumour?

The localisation of its attachment, its close adhesion to the skeleton in the entire postero-superior zone of the nasal fossa, continuing at the level of the body of the sphenoid in the form of a nearly straight insertion seem to prove that the fibrous cicatrix consecutive to the fracture was the origin of the neoplasm.

The pathological examination without establishing the presence of sarcomatous cells discloses, however, the existence of some suspected cells. It seems that in this case we were at the period of malignant transformation, and that we could consider the succession of lesions from a histological point of view, firstly in the form of fibrous hyperplasia in the neighbourhood of the cicatrix, then of benign growth, the third phase that of malignant growth, sarcoma following at the time of the operation.

This case thus appears to prove what Sébileau wrote in his report to the French Congress of Laryngology in 1923 about the naso-pharyngeal fibroma: "As long as we have not proved the connection between the new formation and the inflammatory or parasitic process; as long as we have not penetrated the mechanism by which irritations produce hypertrophy or new formation, sometimes the two, one after the other; as long as we have not discovered the part, in the genesis of all these productions, of cellular teratology, to say of a tissue formation that it is a hyperplasia or a new formation is more a question of words than of dogma. The myxoid of the rhinopharynx is a hyperplastic formation, the fibroma at the same time, by its characteristics, is of hyperplastic and neoplastic formation; the sarcoma which overruns and sometimes terminates this fibroma, it is a neoplastic formation. Everywhere, where there is a hypertrophic or cicatricial state, we find all the intermediates between simple tissue hypertrophy, caused by chronic irritation and new tissue formation which ends in cancer, and we do not know the scientific limit where the former finishes and the latter begins."

3. *From a Therapeutic Point of View.*—The operation accomplished is a proof of the unforeseen resources offered by surgery.

This operation, which constitutes a real hollowing of the whole face, has left no disfiguring results, and the patient has really a mask which hides the considerable loss of substance behind it.

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The risks were great, but if one could always overcome the operative hæmorrhage and the difficulty of separating the tumour from the dura, success would be possible. This intracranial prolongation of the tumour might raise fears of postoperative meningitis. The unimportant consequences of the operation are a proof of the resistance of the dura and of the firmness of the subarachnoid adhesions which constitute in similar cases a natural obliteration of the meningeal space. Evidently the tumour, exercising by its development constant pressure on the meninges, caused inflammatory adhesions in the subarachnoid spaces, and these constituted in consequence an effective protection against all nasal infection.

In the presence of a similar case, considering the possibility of immediate complications of operation and the uncertainty of being able to take away the whole of the tumour, one must ask oneself if it is advisable to attempt the operation. In our opinion there is no doubt that it should be attempted, as the fatal prognosis, following the evolution of these tumours, justifies all therapeutic surgical attempts, no matter how serious.

It is advisable, of course, to increase the chances of success. First, by a careful preparation of the patient before operation. Secondly, the technique adopted should give the greatest possible access to the tumour to ensure as thorough and as complete an exposure of the growth as is possible. In this case all available means of access were undertaken to facilitate the removal of the tumour. A lateral nasal incision supplemented by a wide transverse incision at the level of the infra-orbital margin and the division of the soft palate in the mid-line gave sufficient access. If it had been necessary, the hard palate would have been excised to give a greater freedom for manipulation.

Such destruction should never stop the operator. Plastic surgery now offers the possibility of restoring all facial deformities however severe they may be.

Discussion.

Mr. E. D. D. Davis said that he had struggled with this case for six months; it was the third case of fibroma in which radium had been valueless. In one case, that of a boy, aged 14, he had inserted radium to the extent of 100 mgm., and later had enucleated the tumour with raspatory and forceps, but the bleeding was severe. In the third case the fibroma was enucleated later.

Reverting to this patient, he twice tried to remove the growth by diathermy, but again failed. Then the patient said he would like to consult Professor Portmann, to which he, the speaker, readily agreed. Professor Portmann had achieved a great success and the patient had returned to military duty in India.

Most surgeons employed a raspatory, snare and forceps, and removed the fibroma through the nose, but that was an operation which lacked

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precision, the hæmorrhage was severe, and the operator felt relieved when it was over. If, however, one could hit off the line of cleavage of the tumour, the procedure was much easier. Another route was by lateral rhinotomy, the method employed by Professor Portmann in this case. The speaker was disappointed with his lateral rhinotomy as the fibroma was situated in the narrow upper part of the nasal cavity and there was insufficient exposure of the tumour.

On three or more occasions he had performed Nélaton's operation of splitting the palate, and was not satisfied with the access it gave; one obtained almost as good access by retracting the soft palate.

In Rouge's operation, an incision was made in the sulcus of the upper lip, and the soft tissues were reflected upwards to expose both anterior nares, and by dividing the septum, the whole of the nasal cavity was laid open. Here again the access to the fibroma was insufficient.

Mr. HERBERT TILLEY: The papers of the opening speakers have been so complete that I can only add some personal experiences which correspond with their records, and secondly refer to a few others brought about by causes not mentioned in their communications. Of congenital atresia of the œsophagus, we have a specimen in the Museum of University College Hospital; the infant lived only for three days.

With regard to "functional dysphagia" as a possible precursor of post-cricoidal cancer, I need only refer you to a case (No. IV.) published in the *Journal of Laryngology*, 1931, p. 244, in which the malignant lesion had appeared five years after the functional dysphagia had been completely cured by passage of a bougie. I would emphasise again two points in my commentary on that case: (1) That recurrence of such dysphagia after a primary relief by means of the bougie should call for direct examinations of the gullet; (2) that we must not be deceived by the youth of the patient. My youngest was a girl aged 21, and the diagnosis of post-cricoidal cancer was confirmed by post-mortem examination and section of the growth.

I have had two striking experiences of dysphagia caused by acute œdema of one or both arytenoids.* The first case was that of a man brought to hospital some thirty years ago with very severe stridor and dysphagia. There was intense œdema of both arytenoids, and tracheotomy was performed at once, without local or general anæsthesia. The patient recovered, and the arytenoid œdema slowly disappeared, but the cords have remained in adduction ever since, and he still wears the tube. I presume the case was one of acute inflammation of the crico-arytenoid articulations.

The second case was that of a medical man who complained of hoarseness, with difficulty and pain on swallowing. The left arytenoid was œdematous, and the corresponding cord was fixed in the adducted position. His temperature was 101° F., and he suffered from pain in some of the larger limb joints. He underwent treatment for acute rheumatism and recovered. Two months later I found that his larynx was normal; obviously this was a case in which the crico-arytenoid joint, as well as some of the limb articulations, had been involved. During the past eighteen months

* "Mechanical Immobilisation of the Vocal Cords," *Brit. Med. Journ.*, 1927, ii.

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we have had in the Royal Ear Hospital a female, 39 years of age, of very healthy appearance, whose symptoms were pain and difficulty in swallowing. The laryngoscope showed paresis of the inter-arytenoid muscle, so that on adduction of the cords a triangular aperture was seen between the vocal processes. A bougie could not be passed. Under general anæsthesia only a medium-sized instrument could be introduced with difficulty into the upper end of the gullet. There did not appear to be any lesion behind the cricoid, but the mucosa was very pale and dry. The passage of the tube gave only temporary relief from the pain and dysphagia, so I examined her a second time, after an interval of six weeks, because I feared that some pathological condition might have been overlooked, but again nothing was discovered.

The patient ceased to attend the clinic and possibly some member has since been consulted by her. The condition would seem to be a congenitally narrow opening into the upper end of the gullet, but this does not explain why her symptoms were of more or less recent urgency when she first consulted me. Her Wassermann reaction was negative, and iodide and mercury brought about less improvement than bromides and valerian.

With a considerable experience of foreign bodies in the air and food passages, I can recall only two cases in which the dysphagia was due to the *corpus delicti* being lodged behind the cricoid. One of these was a denture, and efforts made outside the hospital to push the obstruction downwards or to pull it up, had produced an intense œdema of the whole lower pharynx. The denture was easily removed by direct vision but the patient died in twenty-four hours, and the post-mortem examination revealed a false passage just below the œsophageal opening and leading downwards into the left pleural cavity which was full of pus.

Finally, I have seen one female patient in whom dysphagia was one of many obvious symptoms of progressive bulbar paralysis.

Dr. DOUGLAS GUTHRIE mentioned three cases of upper œsophageal obstruction. The first was that of a child, eight months old, who had difficulty in swallowing and made a peculiar gurgling noise during the act. The findings by direct laryngoscopy were negative, but by œsophagoscopy a pedunculated cystic swelling, resembling a nasal polypus, was discovered close to the upper œsophageal aperture. It was removed by snaring and proved to be a thin-walled cyst. He (the speaker) had been fortunate in having the assistance of Dr. Brown Kelly at the operation. The second patient was a three-days-old infant, with œsophageal atresia. The œsophagus, in the lower part of the neck, was found at operation by a surgical colleague to be represented by a fibrous cord, but fortunately there was no communication with the trachea, and a plastic operation was performed. The third case, a woman of 35, underwent operation in 1923 for removal of a post-cricoid epithelioma, which was unusual in springing from a slender pedicle. There had been no recurrence, but the dysphagia, which had been a source of trouble as long as she could remember, had persisted since the operation, and required the periodical use of bougies for its relief.

Dr. R. S. JOHNSON spoke of a small series of cases of combined anæmia and dysphagia which were under the care of Dr. George Graham and

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Professor F. R. Fraser at St. Bartholomew's Hospital. All were in female patients (five married and one single), aged from 33 to 48 years. The degree of anæmia present was marked, the hæmoglobin varying from 32 per cent. to 50 per cent., and in each case of secondary type with a low colour-index of about 0·5. In three cases the secondary type of anæmia was confirmed by the finding of a corresponding Price-Jones curve. The complexion of the patients was striking, being of a brownish-yellow hue, resembling—but not identical with—that in pernicious anæmia. In four cases there was soreness of the tongue, with a partial or complete denudation of papillae and soreness and crackling of the angles of the mouth. The degree of dysphagia varied considerably, being severe in two cases only, mild in three, and never complained of in the remaining case, although here the findings were otherwise typical. A barium meal showed in one case only a slight delay at the cardiac orifice, in five cases giving a normal appearance. The condition seen on œsophagoscopy also varied from a normal appearance in two cases to a marked pallor of the mucosa in one, and in another an area of considerable œdema bleeding readily on touch. In one patient the instrument could not be introduced on account of spasm. A fractional test-meal showed, in every case, a complete achlorhydria. Slight enlargement of the spleen was noted in one patient only.

With regard to the underlying pathology of the syndrome, it had originally been held that the primary condition was the dysphagia, and that the anæmia resulted solely from the consequent limitation or deprivation of food; moreover, that it improved rapidly as soon as the dysphagia was relieved. Although in the present series of cases dysphagia ceased at once following the passage of a bougie or œsophagoscope, the rise in hæmoglobin was notably slow, in some cases taking eighteen months to return to a normal figure. In one case no other treatment was given, yet the anæmia remained unaltered at 36 per cent. hæmoglobin until, following the giving of liver extract, the hæmoglobin rose steadily to 76 per cent. In all but one case marked improvement in the anæmia was finally obtained after the administration of liver extract, or of large doses of iron.

One further observation had been made on the blood which was new, and which seemed likely to give a clue to the underlying condition. In the case which had no dysphagia a preliminary diagnosis of pernicious anæmia was made by the house-physician in view of the yellowish complexion of the patient and slight enlargement of the spleen. When, however, the anæmia was found to be secondary in type, the possibility of acholuric jaundice was considered and an estimation of the fragility of the red corpuscles was therefore made. It was a matter of surprise to find that the fragility was increased, hæmolysis beginning in 0·55 per cent. saline solution and being almost complete in 0·45 per cent., whereas a control test of a normal subject showed no hæmolysis in concentrations higher than 0·45 NaCl. The examination was carefully repeated, and the findings confirmed by the same and by other observers. A Van den Bergh test showed no excess of bilirubin in the blood-serum, so excluding acholuric jaundice as a cause. An increase of fragility was found in five out of the six cases; in the remaining one the test was not made until the anæmia had already markedly improved, following prolonged liver treatment. In

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a control group of patients, with secondary anæmia, due to a variety of causes, the fragility of the red cells was normal.

The question therefore arose whether the syndrome should not be regarded from another angle. Might it not be that there was a specific type of anæmia, associated with a slight increase in the fragility of the red cells, and with achlorhydria and secondary changes in the mucous membrane of the tongue, mouth and œsophagus, and in some of the cases even of the sigmoid colon? It was agreed that six cases formed slender material on which to advance a new hypothesis, and that many more cases needed to be minutely investigated before the ground was sure.

Mr. V. E. NEGUS said he did not know whether congenital abnormalities led to any of these conditions of narrowing at the top of the œsophagus, but it seemed certain that the inflammatory condition led to carcinoma, and it was interesting to know whether the condition could be prevented.

He did not think it was necessary to bring in the question of spasm. The muscle was of great importance, because the difficulty of swallowing was not directly due to the presence of carcinoma or atrophy of the mucous membrane—one could pass the œsophagoscope easily, and food could pass —it was obviously due to the fact that the crico-pharyngeal sphincter did not relax. He had once or twice pointed out that this specialised part of the inferior constrictor was to prevent air entering the œsophagus during respiration. In his earlier days he had been told that the patient gasped because he (the speaker) was pressing on the cricoid cartilage during œsophagoscopy. If one put one's finger on the top of the œsophagoscope and the patient took two or three breaths he would become passive, because the œsophageal respiration had been stopped, a reflex causing irritation below the crico-pharyngeal fold prevented relaxation and did not allow the food to pass.

Mr. A. J. WRIGHT said that he believed the condition to be, originally, due to a chronic infection, and this explained why these patients when seen, though comparatively young, were practically always edentulous, there having been gross sepsis in their mouths early in life. It would be valuable to learn how often this syndrome was followed by new growth, and how often in women with retrocricoid growth one found there had been a pre-existing chronic inflammation. If looked for in retrocricoid carcinoma, it was nearly always found. It had occurred to him that in the same way that the heat of tobacco smoke in men might be a factor in the causation of cancer, so in women the habitual drinking of very hot tea might have the same effect.

Mr. THACKER NEVILLE said he did not think that anywhere tea was drunk so hot as it was in China, in which country he had spent many years; yet he had seen no instances of post-cricoid carcinoma.

He did not know whether congenital webs were common in the œsophagus, but he had had a case in which a woman, aged 50, had complained of dysphagia, and when he passed Jackson's short œsophagoscope the appearance was as if the crico-pharyngeus was wide open. The instrument quickly removed the web, and after that the patient had no more dysphagia.

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A certain number of women attended hospital complaining of dysphagia, and he passed the œsophagoscope in all these cases. In a certain number he could find nothing wrong, yet the passage of the instrument cured the dysphagia.

Dr. BROWN KELLY (in reply) said he would like more details about Professor Portmann's case, in which there was progressive obstruction at the upper end of both the œsophagus and the larynx. He (the speaker) naturally thought of scleroma, but that had been looked for and excluded. Many years ago he wrote a paper, entitled "Sclerotic Hyperplasia of the Pharynx" (*Lancet*, 6th April 1901), and later Sir Felix Semon showed one or two similar cases and reviewed the subject fully (*Lancet*, 25th February 1905). In neither his own nor Sir Felix's cases was œsophagus or larynx affected.

In reply to Mr. Tilley, he (Dr. Kelly) considered that when a patient with recurring spasm at the entrance to the œsophagus complained of pain it denoted usually malignant changes.

Mr. Negus said it was unnecessary to consider spasm of the crico-pharyngeus, but with that he did not agree. In typical cases of spasm at the entrance to the œsophagus steady strong pressure might be needed to overcome the spasm. A few days after the stretching, the patient, whose diet for years may have been semi-liquid, could swallow steak, prunes, nuts, etc.

Interesting information had been supplied by Dr. Douglas Guthrie. He (the speaker) was fortunate in having been shown by Dr. Guthrie the case referred to in which at first the growth appeared to be a polypus, but turned out to be a cyst. But for the limitation of time to-day he would have spoken of congenital cysts, as those occurred at the upper end, and their origin was interesting.

Dr. PATERSON (in reply) said that Mr. Tilley's reference to the youth of these patients reminded him of the case of a married woman of 30 years of age, in whom this trouble came on a few months after her marriage. She became pregnant, and the question arose as to whether she would live to see her pregnancy through. Unfortunately, as often happens when the lower part of the hypopharynx is affected much distress ensued on account of the mucus, etc., and even gastrostomy had little effect and she was unable to live out her pregnancy. The case emphasised the early age at which the condition could exist.

Mr. Negus's case, the progress of which he had followed, was very striking.

For Dr. George Graham's results the section was indebted. As to the suggestion which had been thrown out, that this was a specific type of anæmia, with secondary changes in the tongue, he had gone into the history very carefully and minutely in many of the cases, and he was convinced that in all patients the early stage was one of dysphagia.

With Mr. Wright's suggestion that it was a chronic infection, the speaker agreed, but the question was not quite settled.

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Royal Society of Medicine

ILLUSTRATIVE CASES AND SPECIMENS.

Two Cases of Dysphagia and Anæmia.—D. R. PATERSON, M.D., and R. D. OWEN, F.R.C.S. Ed.

(1) Female, aged 36, married, four children. First complained of difficulty in swallowing about twelve years ago and this became more marked after the birth of first child. Ever since then has been anæmic. Dysphagia is now marked and she is unable to swallow solids, and the left side of throat appears to give her more discomfort. Complexion sallow with a yellowish tint. Tongue smooth, glazed and atrophic. Pharynx, pale and anæmic. Larynx normal.

Blood-count shows a secondary anæmia, the red cells being irregular and staining badly, Hb. 35 per cent. Wassermann reaction negative.

(2) Female, aged 40, married, 3 children. Has had "a small swallow" as long as she can remember. Fifteen years ago became anæmic following birth of first child and difficulty in taking solids became more marked. For the last seven years has taken very little solid food. Tongue smooth and atrophic, lips fissured, mucosa anæmic. Larynx normal.

Blood-count shows secondary anæmia. Hb. 45 per cent.

Three months ago direct œsophagoscopy done. The mucosa at the entrance of the gullet appeared very thin with loss of resiliency and cracked easily on pressure. This caused considerable obstruction to passage of the tube.

Since the œsophagoscopy, has improved greatly in general health and finds it easier to take solids. Hb. now 68 per cent.

Carcinoma of Upper End of Œsophagus. External exposure and insertion of Radon Seeds.—WALTER HOWARTH, F.R.C.S.

P. L., male, aged 65. First seen 4th June 1930. Complained of difficulty in swallowing. Œsophagoscopy, 16th June, revealed growth in the upper end of œsophagus, just below the lower border of the cricoid. I thought that it might be possible to resect this and do an end-to-end anastomosis. At the operation, however, when the œsophagus was exposed through a lateral incision in the neck, the lower end of the growth was found to extend below the level of the sternum into the thorax, and it was not possible to mobilise the œsophagus sufficiently to justify the attempt at excision being made.

Ten radon seeds, 1 millicurie, silver filter, were inserted as far as possible all round the growth. Swallowing improved after the operation and patient remained well until April 1931. Since then swallowing has deteriorated and is now confined to fluids (Bovril, egg and milk, etc.).

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Bismuth emulsion, however, passes fairly freely and without any obvious hold-up at the site of the growth.

Atrophic Œsophagitis in region of Crico-pharyngeal Fold.—V. E. NEGUS, M.S.

September 1924. Female, then aged 58, with history of dysphagia for many years; no solids swallowed for fifteen years. No noticeable loss of weight. Œsophagoscopy showed cicatricial contraction at level of crico-pharyngeal fold.

1925 and 1926.—Dilated with bougies on several occasions with return of normal powers of swallowing.

November 1930.—Dysphagia again for three months. Œsophagoscopy showed glazed, atrophic appearance of mucous membrane at top of œsophagus, with bleeding on touch and some narrowing; no neoplasm present. No active superficial glossitis; no secondary anæmic. Crico-pharyngeus dilated with marked improvement.

March 1931.—Re-examined to exclude possibility of malignant changes. Atrophic appearance still present, but no signs of new growth. No other abnormality found in the œsophagus below the crico-pharyngeal fold.

Inflammatory Swelling of Ary-epiglottic Folds.—V. E. NEGUS, M.S.

July 1930.—Female, aged 54, complaining of "throbbing in throat" and "froth in throat"; could swallow without difficulty.

Indirect examination showed regular firm red swelling of posterior region of ary-epiglottic folds without ulceration.

Œsophagoscopy did not reveal any neoplasm, or any other abnormality of the œsophagus. Wassermann reaction negative; no secondary anæmia.

March 1931.—The condition has remained unchanged; diagnosis not made.

Dysphagia associated with Anæmia.—W. A. MILL, F.R.C.S.

D. M., female, aged 31 years. First attended hospital 12th March 1930. She complained that for at least seven years she had had difficulty in swallowing—especially with solids. When first seen she could not eat meat, and bread and butter was very difficult to swallow. The tongue had been sore on and off for several years. Several septic teeth had been extracted eighteen months previously. She looked very anæmic. R.B.C.'s. 4,200,000; C.I. 0·75. Pharyngeal mucosa pale. Tongue: some bald patches. No enlargement of the spleen. Patient was given iron and arsenic, and on 14th May 1930 a large œsophagoscope was passed. Nothing abnormal was seen. Since the œsophagoscopy she has been able to swallow quite well. Her colour has also improved considerably.

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Dysphagia caused by Inflammatory Swelling of Larynx.—T. B. LAYTON, D.S.O., M.S.

Mr. G. A. H., aged 55. Dyspnœa and dysphagia 1929, with large swelling in arytenoid region, thought to be a carcinoma. Tracheotomy. Gland found on crico-thyroid membrane proved tuberculous. Rapid improvement of laryngo-pharyngeal condition after tracheotomy. Examination of chest showed extensive fibroid phthisis on either side. Has been at work until recently.

Carcinoma at Upper End of Œsophagus, following Intrinsic Carcinoma of Larynx, apparently cured for Ten Years.—ALEX. R. TWEEDIE, F.R.C.S.

Specimen taken from a man, aged 74, with the following history:—

First seen December 1919, complaining of huskiness, found to be due to an epithelioma of the anterior half of the left vocal cord. Growth removed, same month, under local anæsthesia and suspension laryngoscopy by means of swivel scalpel and Paterson forceps.

April 1920.—Slight recurrence (histologically proved), removed by similar method.

April 1921.—No sign of recurrence. Left vocal cord well reformed and mobile.

February 1922.—Glottis perfectly healthy, except for formation of small fibrous web in anterior commissure.

January 1930.—Laryngeal condition unaltered. Patient merely reported to demonstrate his excellent general health.

March 1930.—Patient reported complaining of rapid decrease in weight and increasing dysphagia. Examination revealed healthy unaltered intra-laryngeal condition, but enlarged fixed glands in right lower neck.

Condition necessitated gastrostomy, shortly following which patient collapsed and died from cardiac failure.

Post-mortem examination by Mr. Negus: "The laryngeal condition appears to be cured. There is an epithelioma at the upper end of the œsophagus with adenomatous enlargement of a lateral lobe of the thyroid gland.

"The œsophageal neoplasm does not appear to have any direct association with the laryngeal growth; it seems rather to be a second primary carcinoma."

Report on Sections.—"The piece of tissue from the top of the œsophagus is extensively infiltrated with epitheliomatous growth. The growth is arranged chiefly in small masses and strands. There is some cell-nest formation with central keratinisation. Cell division does not appear to be very active, and there are comparatively few mitoses. There is a supporting stroma of young fibrous tissue showing a little infiltration with

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inflammatory cells chiefly lymphocytes. The tumour should be placed in Group II in Broder's classification.

"The piece of thyroid tissue shows a fœtal adenoma into which there has been hæmorrhage and with a degenerate and œdematous stroma. There is no sign of any malignant invasion in the section" (E. ff. CREED).

Early Epithelioma from Pharyngeal Surface of Cricoid Cartilage.—V. E. NEGUS, M.S.

May 1930.—Female, aged 37, complained of dysphagia. Surface of tongue smooth, owing to previous superficial glossitis. Secondary anæmia with R.B.C.'s 4,810,000; Hb. 42 per cent.; C.I., 0·44.

Œsophagoscopy showed mucous membrane at top of œsophagus to be atrophic and glazed, splitting when stretched; slight superficial ulceration, but no neoplasm present.

Treated with liver extract and ventriculin and also by repeated dilatation of œsophagus.

December 1930.—Dr. Adlington, of Great Yarmouth, reported that a small nodule had been removed from right pyriform fossa, and found on section to be epitheliomatous.

January 1931.—No neoplasm to be seen on œsophagoscopy; symptoms as before. Hb. 49 per cent.; C.I., 0·46. Pharyngotomy not considered justifiable.

March 1931.—Nodular area discovered behind cricoid to the right; biopsy showed irregular epithelium, with inflammatory changes, but no definite evidence of malignancy.

April 1931.—Lateral pharyngotomy performed; definitely infiltrated area removed from post-cricoid region. Skin-flap turned in.

Patient died next day, apparently from septic pneumonia.

Post-cricoid Carcinoma.—LIONEL COLLEDGE, F.R.C.S.

Female, aged 39. Small build. History of many years' dysphagia. Has had a secondary anæmia with 45 per cent. hæmoglobin, with smooth tongue and atrophy of mucous membranes. When examined endoscopically by Mr. R. D. Owen of Cardiff, November 1929, the larynx was normal and the post-cricoid area was tense and anæmic but no growth was seen. She improved on treatment with iron and liver, the hæmoglobin reaching 85 per cent. She returned in March 1931 with great increase of dysphagia for six weeks. Examination showed a growth rising up behind the arytenoid and fixing the left half of the larynx. She was seen by Dr. D. R. Paterson who advised operation. The larynx was movable and no cervical glands were palpable.

On *27th March* 1931, the whole larynx and a segment of the pharynx were removed at St. George's Hospital. No enlarged cervical glands were removed. Although the patient was edentulous there was some sloughing, but she has made a good recovery. The thyroid gland

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was enlarged, making it difficult to cover the entire wound surface with skin flaps. The specimen shows an epithelioma on the back of the cricoid: it just fails to reach the pyriform sinus on either side.

Œsophagus with Congenital Stenosis at entrance.—A. Brown Kelly, M.D.

Removed from a man, aged 35, who died from cerebral hæmorrhage and who had never suffered from dysphagia.

The lower half of the post-cricoid region shows gradual narrowing to the pharyngo-œsophageal junction where it is reduced to an opening of about 4 mm. in diameter. The constriction is fully 1 cm. in length. Beyond it the œsophagus is normal. The lining membrane is perfectly smooth and without trace of cicatrisation.

Dysphagia secondary to Carcinoma of the Larynx—W. A. Mill, F.R.C.S. (*N.B.*—A specimen from this case was shown at the Meeting, on 7th November 1930, as an unusual type of carcinoma of the larynx.)

A. B., male, aged 39, three weeks' hoarseness, sent by doctor to throat clinic; four weeks' simple treatment without improvement. Slight obstruction of breathing and some difficulty in swallowing supervened, and he was sent to another hospital where the admitting officer thought he was suffering from laryngeal diphtheria and transferred him to the North-Western Fever Hospital. Seen twenty-four hours later he had an acute inflammation of the mouth and pharynx, covered with a white film, probably aphthous in nature. Laryngeal examination was difficult; he appeared to have a bilateral abductor paralysis. Mr. Layton thought he would be obliged to undergo tracheotomy before being moved again, but that, if possible, this had better not be done until the acute inflammation had subsided. It was carried out about ten days later. Subsequent examination showed a greyish-white mass below and parallel with the cord on either side which Mr Layton took to be a syphilitic subglottic infiltration. Wassermann test negative. Transferred to Guy's Hospital out-patient department. Put on course of novarsenobillon; four more Wassermann tests all negative. Chest examination, including X-ray, negative. Smooth, spherical swelling gradually developed in mid-line in region of crico-thyroid membrane. Piece removed under novocain reported to be carcinoma.

Laryngectomy performed 26th September 1930.

Post-cricoid Carcinoma treated with Radium. Specimen.—W. A. Mill, F.R.C.S.

From a woman aged 63, with the following history:—

First seen *7th April* 1930.—Had had dysphagia for six weeks and

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could only swallow semi-solids; upper edge of post-cricoid growth could just be seen.

11*th April* 1930.—Endoscopy revealed growth on back of cricoid, extending on to right lateral pharyngeal wall.

29*th April* 1930.—Tracheotomy and gastrostomy (local anæsthesia).

16*th May* 1930.—Under local anæsthesia lateral pharyngotomy (left side) carried out, with removal of posterior part of left ala of thyroid cartilage.

5-1·33 mgm. and 5-0·6 mgm. radium needles inserted around and deep to the growth. Pharynx sutured, except above and through the opening strings of needles were passed and fixed to neck. 23rd May needles removed. Dose 1621·2 mgm. hours.

23*rd July* 1930.—Patient discharged. Gastrostomy tube still in position. Fistula in left side of neck. Swallowing solids. Patient after discharge led a more or less normal life and had an ordinary mixed diet.

27*th August* 1930.—Readmitted for treatment of glands (none palpable) by radium collar. 40·04 mgm. applied to each side of neck on Sorbo collar. Total dose 13,550 mgm. hours.

Normal swallowing continued until end of February 1931, when dysphagia returned; the gastrostomy by this time had been allowed to close. Readmitted, and second gastrostomy was performed 27th March 1931. Patient died, 29th April 1931.

Post-mortem examination showed recurrence of growth below its original site. This was ulcerated and the posterior surface cricoid cartilage was lying exposed in it. The cartilage appeared to be dead.

OTHER CASES AND SPECIMENS.

Endothelioma of Maxilla and Pterygo-maxillary Fossa.—WALTER HOWARTH, F.R.C.S.

Miss I., aged 25, had suffered for some months from swelling of the right cheek and jaw, which was increasing in size. There were no signs of sinus or antral disease.

On examination, a large, smooth swelling was found in front of the maxilla, bulging down below the alveolar border and distending the labio-gingival fold. The swelling was elastic to the touch, but its extent could not be defined accurately.

At the operation, when the cheek was retracted and the tumour exposed, a very large solid growth was found occupying the front of the maxilla and extending into the pterygo-maxillary fossa, almost as high as the base of the skull. It was very adherent to the surrounding tissues, particularly to the internal pterygoid plate, but

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was eventually shelled out in three large pieces. The tumour appeared to have a definite capsule and on section contained masses of bone.

Microscopical examination showed it to be an endothelioma of the mixed parotid type.

Laryngeal Case for Diagnosis.—T. B. JOBSON, M.D.

Miss T., aged 20. Shown at February Meeting, 1931. Chronic laryngitis six months. Larynx shows greenish-yellow crusts on cords and arytenoids. Interarytenoid area is hypertrophied. Voice very husky. Both maxillary antra contained muco-pus. These cleared up with irrigation. Septic tonsil remains are being removed by diathermy. Patient has had five attacks of hæmoptysis. Sputum negative for T.B. on several occasions. Skiagram of chest shows no evidence of phthisis. Wassermann reaction negative. Direct smear shows no *T. pallida*. Gram preparations show *streptococci*—non-hæmolytic, and *Staphylococcus albus*.

DR. BROWN KELLY asked whether the antra of this patient had been treated, as a good deal of muco-pus was descending over the posterior wall of the larynx.

Osteoma of Ethmoid.—LIONEL COLLEDGE, F.R.C.S.

Patient, male, aged 27. Complained of nasal obstruction and a discharge from the right side of the nose. The attempt to remove some polypi revealed a long tumour in the right nasal fossa reaching high up and down to the floor. Skiagram showed an osteoma in the right nasal fossa occupying the right ethmoidal region.

Operation, 13th April 1931. — The right external carotid was ligatured and laryngotomy performed. The tumour was exposed by Moure's operation, the incision being carried through the lip. The tumour was then lifted out easily and its exact site of origin could not be determined as it seemed to be loose, fixed only by the bed in which it lay. The patient made a good recovery with primary healing of the wound. The tumour is irregular in shape with many bosses. It measures roughly two inches in each dimension.

Recurring Pain after Frontal Sinus Operation, relieved by Injection of Eucaine β Solution by means of Hartmann's Frontal Sinus Cannula. — Sir JAMES DUNDAS-GRANT, K.B.E., F.R.C.S.

Mrs. ——, aged 56, has had numerous nasal, aural, and general complications. At the frontal sinus operation there was found a polypus seated in the orifice of the infundibulum (like a stopper in a decanter). A portion of the ascending process of the maxilla was removed and a free and permanent opening effected. Great relief followed for several months. Mastoid complications called for operation in May 1929. Pain returned with great intensity in September 1929

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in the frontal region, extending backwards to the vertex. The result of injection of the infra-orbital nerve with alcohol was negative, but a month later great relief followed the blowing of a small quantity of a ½ per cent. solution of eucaine β into the frontal sinus by means of Hartmann's cannula. Dr. Yelland attributed many of her symptoms, including vertigo, with a violent tendency to fall forwards, to an injury to the head sustained many years before. The giddiness yielded to the administration of small doses of liquor hydrargyri perchloridi, and when it now recurs it is at once relieved by the perchloride.

The case has been complicated by a "dry" pleurisy and severe nervous shocks.

The nerve supply of the mucous lining of the frontal sinus by branches of the supra-orbital nerve suggested to me the local injection of eucaine through the cannula.

The interesting point is the negative result from the injection of the nerve, whereas the relief from the injection of a few minims of the eucaine β-solution through the infundibulum into the sinus was astonishing, the effect lasting a considerable time.

Killian Operation performed by the Exhibitor Twenty-three Years ago for Left Frontal Sinusitis.—Sir JAMES DUNDAS-GRANT, K.B.E., F.R.C.S.

The operation was the typical one described by Killian, and it shows the moderate amount of deformity in an average case.

I am indebted to Mr. Watkyn-Thomas for referring the patient for my inspection.

Foreign Body Perforating at level of Crico-pharyngeal Fold.—V. E. NEGUS, M.S.

July 1929.—Male, aged 23, said to have a piece of mutton-bone stuck at level of crico-pharyngeal fold; the latter was seen, on œsophagoscopy, to be swollen, but no foreign body was found. Patient went home free from discomfort.

Next day readmitted with tenderness, swelling, and surgical emphysema of neck, and œdematous swelling of larynx. Œsophagoscopy showed an inflamed lacerated area at level of crico-pharyngeus with exudation of much pus from a perforation in the left wall.

External operation displayed a large abscess cavity on left side of larynx and top of œsophagus: no bone found. The wound was drained and progress was uneventful.

August 1929.—Dyspnœa due to sudden inflammatory swelling of ary-epiglottic folds; left vocal cord motionless. Tracheotomy urgently required.

No foreign body found on œsophagoscopy in August and September

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1929. Œdematous swelling of larynx persisted. Tracheotomy tube worn partially corked.

January 1930.—Readmitted with swelling of neck, which soon subsided.

May 1930.—Pricking sensation at level of cricoid cartilage. Four small pieces of bone removed from behind cricoid cartilage by œsophagoscopy.

November 1930.—A small hard fragment, probably necrosed laryngeal cartilage, removed through osophageal speculum.

1931.—Swelling of ary-epiglottic folds gradually disappearing; airway through larynx is improving noticeably.

Thyreo-hyoid Pharyngeal Fistula following Cut Throat.—F. C. W. CAPPS, F.R.C.P.

J. S., hotel porter, aged 61. At the beginning of November while out of work, and in a depressed condition, cut his throat. Was taken to hospital, where tracheotomy and another operation were performed. The tracheotomy tube was retained for three weeks; he was artificially fed, apparently through the pharyngeal fistula now present. Transferred to another hospital on 12th December.

First seen by me 16th March 1931, when the condition now present was found. The tracheotomy wound has soundly healed. There is a permanent fistula about $\frac{3}{4}$ in. in diameter at the thyreo-hyoid area from which the upper and middle compartment of the larynx are clearly visible. All the movements of the glottis can be seen; the movements of deglutition can also be studied if the head is thrown well back. Indirect laryngoscopy shows the epiglottis to be detached from the main structures of the larynx and to be lying on the right side.

Several septic teeth have recently been extracted.

INSTRUMENTS.

The "Ovipositor" Radon Seed Implanter.—E. WATSON-WILLIAMS, M.C., F.R.C.S.

This consists of a hollow steel needle, moderately sharp, composed of two steel springs in close apposition. A window in the base permits the introduction of the seed. The needle is then placed under direct vision exactly in the spot chosen, when closure of the handle brings a plunger into action and pushes the seed out just beyond the tips of the springs; the latter close behind the seed before withdrawal. The thread can be made to fit any laryngeal or œsophageal forceps set.

A Direct Laryngoscope.—E. WATSON-WILLIAMS, M.C., F.R.C.S.

This instrument is a modification of that introduced by the late Mr. William Hill, the beak being longer and more smoothly tapered.

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