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Royal Infirmary, Edinburgh

President—A. LOGAN TURNER

November 26th, 1932

Abstract of Paper on Backward Displacement of the Tongue (Glossoptosis)

By DOUGLAS GUTHRIE

IN this short paper Dr. Douglas Guthrie drew attention to a common cause of respiratory obstruction in infants. Although we were familiar with acute respiratory obstruction caused by the falling back of the tongue during anæsthesia, we were apt to overlook the chronic variety to which attention was drawn by Dr. Pierre Robin of Paris when he first described the condition of glossoptosis about ten years ago. Robin showed that it was due to lack of development of the lower jaw (mandibular atresia). As the lower jaw and tongue were intimately connected, the tongue was, in such cases, crowded back into the lumen of the pharynx. The space between the tongue and the posterior pharyngeal wall was diminished, even in normal infants, when the head was flexed, and that was what occurred when the infant was fed in a recumbent rather than in a vertical position. Domestic animals such as the calf and sheep extended the head and pushed the chin forward during suckling, and obviously this was the natural posture. Glossoptosis was aggravated, or even caused, by wrong posture during feeding. The obstruction might be relieved by the extension of the head and the child was then able to suck without any embarrassment to breathing. The obstruction was also relieved by opening the mouth, thus drawing the tongue forwards and widening the lumen of the pharynx. Children who suffered from glossoptosis often kept the mouth open, but this did not imply that they were mouth breathers. The treatment was largely a matter for the dental surgeon. Even in young children he could successfully deal with the malocclusion, although much patience was demanded on the part of both patient and surgeon. Often the obstructive

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symptoms of glossoptosis disappeared under improved hygienic conditions.

The communication was illustrated by a number of lantern slides.

Dr. BROWN KELLY: "I should like to ask Dr. Guthrie if he has made any note of the length of the frænum in these cases. In the old days, when this was often cut, cases were reported in which, owing to the tongue falling back and covering the entrance to the larynx, death followed from suffocation. At one time my attention was directed to abnormal mobility of the tongue by meeting this condition in four patients. All were young men who suffered from drying of the secretion in the naso-pharynx. In their efforts to make themselves comfortable they found that they could pass the tongue up behind the soft palate and dislodge the adherent crusts. In order to acquire this so-called 'lingual acrobatism' both frænum and tongue must be long. These peculiarities are occasionally familial."

CASES

CASE I—**Congenital Stenosis (shortening) of the Œsophagus.**—DOUGLAS GUTHRIE.

Elizabeth McL., now aged 12 years, was admitted to a surgical ward of the Royal Hospital for Sick Children two years ago. She was a full-time child and weighed 6 lb. at birth. Since birth she had suffered from vomiting during, or immediately after food, but had no pain, nausea or loss of appetite. She was undersized and greatly emaciated, weighing only 15 lb. instead of 67 lb., the normal weight of a girl aged 10 years.

The operation of gastrostomy was performed shortly after admission on November 18th, 1930. This was followed by a great improvement in her general condition. During the past two years she has for the most part resided in hospital or in the convalescent home. In May, 1932 her weight was 37 lb. but since then she has lost 5 lb. Six weeks ago she was transferred to the exhibitor's care. X-ray examination shows a dilated œsophagus, with stenosis at the level of the seventh dorsal vertebra. No dilatation below the constriction could be demonstrated.

Œsophagoscopy on October 5th, 1932 revealed a widely dilated œsophagus containing 50 ccm. of fluid and, at a distance of 25 cm. from the incisors, a small opening slightly to the left of the centre and guarded by a fold of mucosa. A 3 mm. gum elastic bougie (Jackson's No. 11) was with difficulty passed through the stricture for a distance of 7 cm. Since then she has retained fluids taken by the mouth, but is still fed mainly by the gastrostomy tube. It is now proposed to attempt retrograde dilatation, and the exhibitor would welcome suggestions as to procedure.

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DISCUSSION.

Dr. BROWN KELLY: "The fact that this child has been vomiting since birth, especially at or immediately after food, is strongly suggestive of congenital stenosis. In so debilitated a subject gastrostomy was to be preferred prior to any œsophageal manipulation. There should be a rule, however, that patients with dysphagia should have the œsophagus examined before undergoing gastrostomy. Dr. Guthrie's film shows a picture of congenital stenosis and the fact that the obstruction is opposite the seventh thoracic vertebra rather supports the view that the œsophagus is short. But if the œsophagus is short, then part of the stomach should be in the thorax and appear in the X-ray film as a dilated viscus extending from the stenosis to the hiatus in the diaphragm. In addition, the 'stenosis' would in reality be the cardiac canal through which an œsophagoscope could be passed with comparative ease, a procedure which does not seem to have been possible in this patient."

Dr. MARTIN: "I do not think this is a case of congenital shortening of the œsophagus as described in the notes; it is more likely to be a congenital stenosis. Dilatation in this condition is very difficult; one can so easily over dilate and damage the mucous lining, and thus cause further stenosis. I would suggest that the continuous bead method developed by Tucker of Philadelphia should be tried in this case. In the examination of a congenital shortening of the œsophagus in which part of the stomach is above the diaphragm, the cardiac end of the stomach can easily be demonstrated with the œsophagoscope, by means of which one can see the diaphragmatic opening nipping the stomach. In this case, of course, the œsophagoscope can simply demonstrate the stricture and nothing further down."

CASES II-X—**Treatment of Malignant Disease of the Nose, Throat and Ear by means of Radium and Deep X-Ray Therapy.** (9 cases.)—J. S. FRASER.

The method of radium treatment need not be described in detail. Dr. Duncan White, Radiologist to the Royal Infirmary, Edinburgh, has kindly supplied the following short account of the method of using deep X-ray therapy.

Multiple ports of entry are employed, usually four to six in number; small intensities are administered throughout a period of from four to six weeks, one or two fields being treated daily until each skin field has received two to three U.S.D. (unit skin dose) at a voltage of one hundred and eighty thousand; the filtration used is one millimetre copper and three millimetres aluminium.

The principle of the treatment is the administration of small intensities of radiation for a prolonged period; to improve the depth dose and, at the same time, to diminish the intensity, we have increased the tube skin distance from forty to sixty centimetres.

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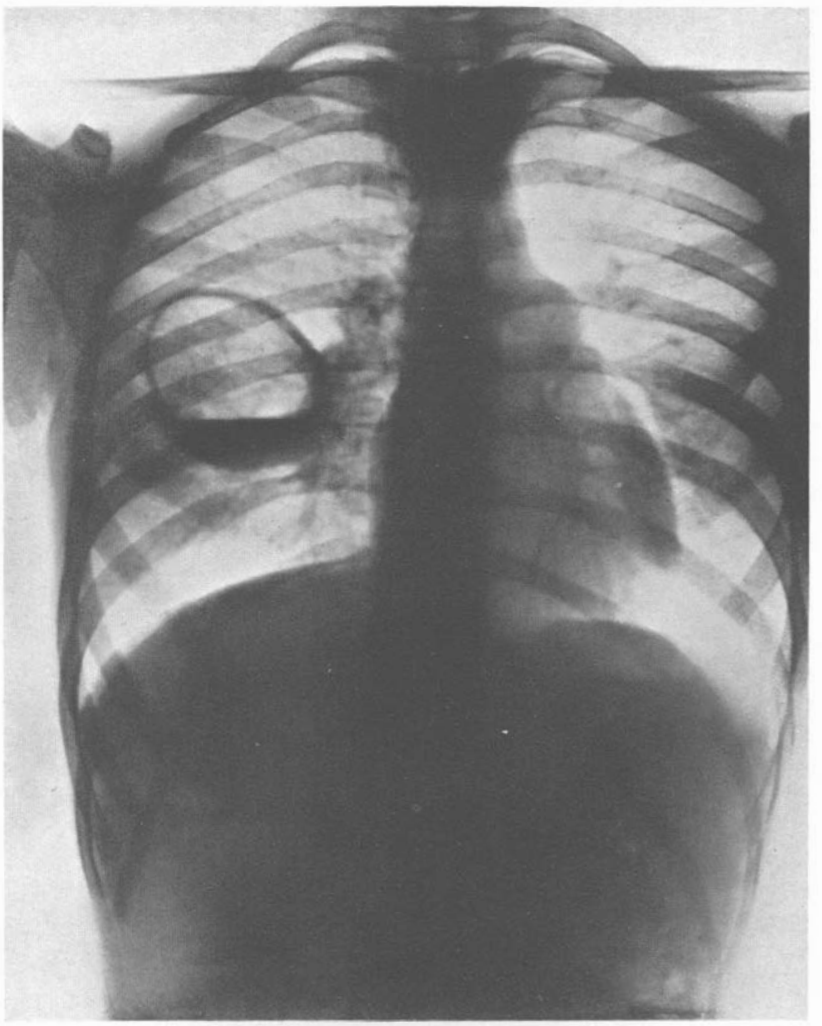


Fig. 1. Case XI.
Margaret R. Radiogram of lung abscess, 21.10.32.

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(II) Dan C., male, aged 65, was first seen on 12.1.32, complaining of pain on swallowing for six weeks.

Examination showed small, hard, tonsillar and submaxillary glands on the right side; the teeth were in bad condition; there was malignant ulceration of the right tonsil and base of the tongue. The Wassermann reaction was negative. Numerous teeth were extracted.

27.1.31.—Six 1 mg. radium needles were inserted in the usual way. On 2.2.31 the needles were removed (total 864 mghrs.). 16.3.31.—The condition of the fauces and the tongue was satisfactory; the glandular enlargement had, however, increased. Deep X-ray treatment given. 19.5.31.—The patient has had a full course of deep X-ray therapy to the neck without any response. 7.7.31.—Operation by Professor Wilkie—radium needles inserted in three groups in the glandular swelling in the neck, eight 2 mg. needles and ten 1 mg. needles. 28.9.32.—Patient died.

(III) Napoleon D., male, aged 53, seen on 23.2.31 complaining of pain in the left maxilla, and a bad taste.

Examination showed a large shallow ulcer involving the left half of the hard palate and junction of the gum and the lip. The Wassermann reaction was negative.

4.3.31.—Twelve 2 mg. radium needles were attached to a tooth plate and applied by the dental surgeon (total 3,500 mghrs.). 27.4.31.—Small sequestrum removed. Deep X-ray therapy given in four cervical fields, 27.4.31–15.5.31 and to left maxillary area 15.5.31–20.5.31. Patient died 5.6.31.

(IV) John D., aged 73, seen on 29.7.31 complaining of pain in the right side of the throat and right ear for ten days.

Examination showed ulceration in the region of the right anterior pillar, extending to the base of the tongue. There was no palpable glandular enlargement.

31.7.31.—Local anæsthesia; six radium needles, each 2 mg. inserted into the base of the tongue and the right tonsil (total 1,152 mghrs.). 23.10.31.—The local condition was satisfactory but an enlarged gland was palpable behind the angle of the right mandible. Death in the Spring of 1932.

(V) Thomas G., male, aged 64, seen 14.12.31, complaining of pain in the right ear for many years and in right side of the throat for three weeks!

Examination showed a large ulcer, with over-grown edges, in the region of the right anterior pillar, spreading on to the cheek and to the base of the tongue; doubtful glandular enlargement. The Wassermann reaction was negative.

21.12.31.—All teeth were extracted. 12.1.32.—Eight 1 mg. needles inserted (total 960 mghrs.). 3.2.32.—The local condition

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was satisfactory but an enlarged hard gland was felt in neck. Deep X-ray therapy given 5.3.32–13.3.32 to both sides of neck. 10.10.32.—Still enlarged gland on right side; local condition satisfactory. X-ray therapy to right side of neck 19.10.32–20.10.32. Patient has not been seen since the last treatment.

(VI) R.W.W., male, aged 60, referred by Dr. Mathers, of Dundee, for deep X-ray treatment. When seen on 25.1.32 he was complaining of difficulty in swallowing of eight months' duration. In October, 1931 Dr. Mathers had applied radium externally (16,000 mghrs.). Dr. Mathers reported that on November 26th, 1931, he could find no trace of the growth but, on January 11th, 1932, the patient returned complaining again of pain on swallowing; and examination showed swelling of the right lateral wall of the pharynx and a recurrence of growth in the epiglottis. External operation was contraindicated. The Wassermann reaction was negative.

Examination on admission showed leucoplakia on the inner aspect of the cheeks and swelling of the right edge of the epiglottis extending to the ary-epiglottic fold, with ulceration. The left side of the larynx and both vocal cords were normal. No definite glandular enlargement. Deep X-ray therapy was given to both sides of neck 25.1.32–3.2.32 and again 29.2.32–11.3.32, also 29.4.32–6.5.32 and 13.6.32–18.6.32.

31.10.32.—Dr. Mathers reports that he last saw the patient on September 8th, when he was very much worse but still able to go about. The right side of the epiglottis was thick, swollen and ulcerated. There was also distinct enlargement of glands in the neck on the right side. Death 20.11.32.

(VII) John S., male, aged 71, seen 8.4.32 complaining of sore throat for one year and of swelling in the neck for two months.

Examination showed irregular, pale yellowish-pink growth on the right half of the epiglottis, extending into the glosso-epiglottic fossa. The Wassermann reaction was negative. Septic teeth were removed.

26.4.32.—Operation by direct method and a piece removed from the right half of epiglottis; report— "malignancy with deep invasion." The patient was sent to a general surgeon who considered operation was contraindicated on account of patient's general condition. 10.5.32.—Local anæsthesia; growth removed as far as possible by indirect method, including the use of the large epiglottis forceps. 13.5.32–27.6.32.—X-ray therapy. 29.6.32.—Stump of epiglottis not yet quite healed; slight swelling of arytenoid region. 14.7.32–11.8.32.—X-ray therapy. 15.8.32.—Dr. Duncan White thinks that further irradiation is not indicated; stump of epiglottis looks well; apparently no disease in

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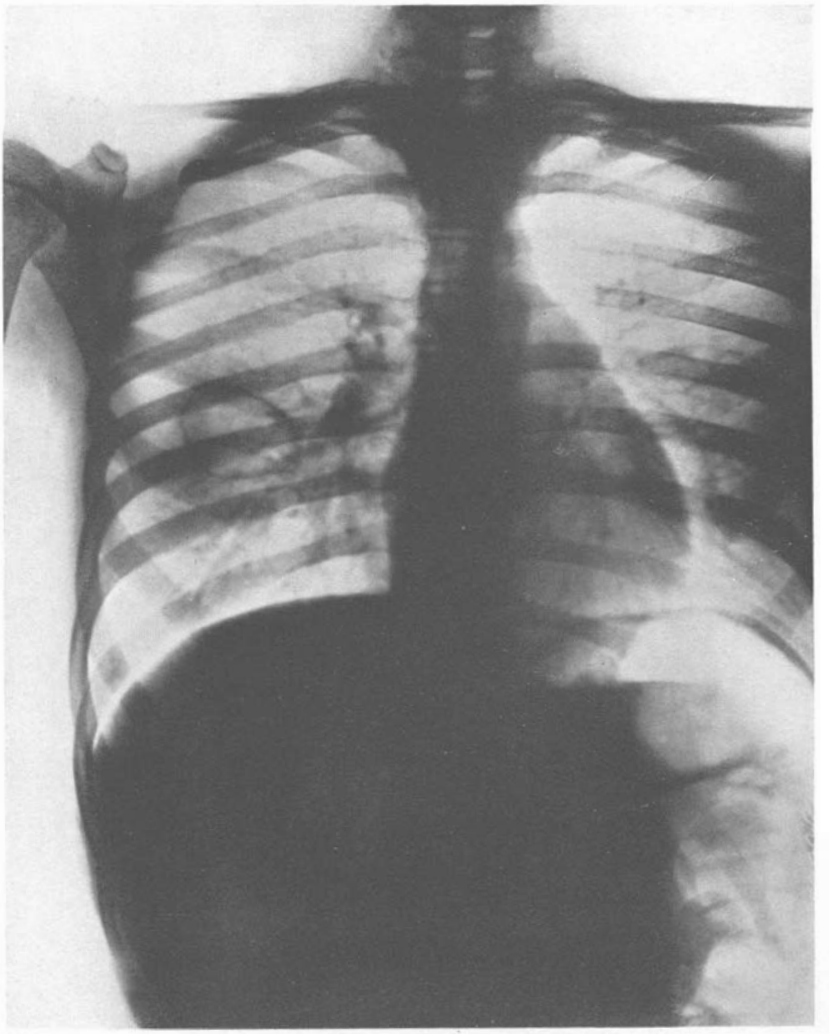


Fig. 2. Case XI.
Margaret R. Radiogram of lung abscess, 8.11.32.

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glosso-epiglottic fold; vocal cords normal. 3.10.32.—Local condition very satisfactory.

(VIII) Mary T., aged 39, seen 2.5.32 complaining of pain at the left angle of the jaw for some weeks, with difficulty in swallowing. Examination showed all teeth to be absent; swelling of left tonsil but no ulceration; epiglottis normal; glands enlarged. The Wassermann reaction was negative.

28.5.32.—The left tonsil was dissected out under local anæsthesia (Dr. A. B. Smith); the tonsil was friable and broke up easily; pus was present in the upper pole. Dr. Smith considered the appearance suggestive of malignancy. Pathologist's report—"Tissue almost entirely composed of squamous epithelioma."

2.6.32.—Local anæsthesia; eight 1 mg. needles inserted (total 960 mghrs.). 24.6.32.—Swelling in the left lateral wall of pharynx still present; tonsillar gland enlarged on both sides. Deep X-ray therapy 4.7.32–10.8.32 to five cervical fields.

10.8.32.—Indirect laryngoscopy shows that there is still ulceration and sloughing in the region of the pyriform sinus; swelling of the left half of the epiglottis and ary-epiglottic fold; stony hard glands were still present on the left side. 28.8.32.—Tonsil fossa looking satisfactory but left half of larynx unaltered. Glands below the left mandible are now enlarged. 29.8.32–3.9.32.—X-ray therapy to left side of neck. In the beginning of October, 1932, swallowing became impossible. 19.10.32.—Patient admitted to Beechmount and gastrostomy performed by a general surgeon. 21.10.32.—Death.

(IX) Emily S., aged 61, was seen 8.6.32 complaining of difficulty in swallowing for six months; hoarseness for two months and pain shooting up to the ear.

Examination showed teeth in a very bad condition; indirect laryngoscopy revealed œdema of arytenoids; both vocal cords moved well. Direct œsophagoscopy showed ulceration of hypopharynx; pieces were taken away and reported on, showing "widespread infiltration by a squamous epithelioma". General surgeon refused to operate.

17.6.32–1.8.32.—X-ray therapy to four cervical fields. 4.8.32.—Impossible to pass even the small-sized bronchoscope through the hypopharynx. 11.10.32.—Direct hypopharyngoscopy—condition unaltered. Radiograms still show obstruction but not so marked as on the previous occasion.

(X) Elizabeth D., aged 71, seen 18.7.32 complaining of pain in, and discharge from right ear of nine months' duration; pain worse at night.

Examination showed a horny projection of keratinised epithelium in the anterior wall and floor of the right external meatus.

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The patient was unwilling to have an operation which was performed 4.8.32, i.e. radical mastoid operation. The tumour had eroded the bone towards the tip of the mastoid. An attempt was made to take out a sleeve of tissue consisting of the membranous meatus but it was found impossible to get the whole of the tumour away. Fistula in lateral canal. The tympanic cavity was full of disease and the facial nerve was exposed by disease. Pathological report—" squamous epithelioma."

The patient made a good recovery as far as the operation was concerned and went to Convalescent Home, 24.8.32. Treatment by radium was suggested but Dr. Duncan White preferred deep X-ray therapy and this was given 10.9.32–22.9.32. 20.11.32.—The patient's doctor reports that she developed erysipelas on Nov. 17th, and is unable to report. There is still an offensive discharge from the ear and the general condition is not good.

(XXI) **Intrinsic Cancer of Larynx.**—J. D. LITHGOW.

George R., aged 72. Case for further report. Squamous epithelioma of the left vocal cord, treated by fenestration operation with insertion of radium. The patient is working regularly.

Operation on 28.1.31.

(XXII) **Malignant Hæmangio-endothelioma of the Nose.**
—G. EWART MARTIN.

First seen 16.6.32.

Complaint of increasing swelling of the left side of the nose. *Duration* some weeks.

Examination shows swelling of left side of the nose. No view of interior of the nose on the left. There was some purulent discharge and a large abscess in the left lower alveolus. No information was obtained from posterior rhinoscopy.

The *X-ray report* was that the left side of the nose was irregularly opaque.

The *Wassermann* reaction was negative.

Histological examination. (As title.)

1.8.32.—*Operation.*—Incision as in the Roux operation, and tissues elevated till sufficient access was obtained to the ethmoidal region. Lateral wall of nose and anterior wall of antrum removed. Septum removed to facilitate inspection of cavity. Mouth wound closed.

Subsequent treatment.—Deep X-ray therapy.

Present condition.—Cavity clean, but there is a suspicious area on the left ala. Case to be treated with radium.

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(XXIII) **Squamous Epithelioma of Antrum and Upper Jaw.**—G. EWART MARTIN.

Archibald L., aged 65. Case previously shown, for further report. 25.2.31.—Squamous epithelioma of antrum and upper jaw treated by excision and radium.

DISCUSSION.

(CASES II—X.)

Dr. FRASER: "I must apologise for showing so many cases but, as you will notice, most of the patients are dead. Apparently there are only two or three successful cases out of a series of nine, and even in these the time is too short for one to come to any conclusion. I wish to call attention to the unreliability of the history given by patients. You will notice that some of them complained of pain and discomfort for ten days, whereas a large malignant ulcer was found. The second point is the bad state of the teeth. We all know that the state of the teeth of the hospital class in Scotland is very bad indeed. One regrets that toothache is such a rare trouble. If there were more toothache teeth would be better attended to. Thirdly, the question of secondary glands. We have been most unsuccessful in their treatment by radium, deep X-rays, or even by surgical removal."

Dr. SIMSON HALL said that Dr. Fraser's reference to the description of deep X-ray therapy technique, recently published in the *Journal of Laryngology and Otology*, is interesting, as at a meeting of this Society a year ago a specimen was shown, from Mr. Lithgow's department, of a hypopharynx and larynx which had been treated for epithelioma by the technique outlined in the article referred to. This technique was used in Mr. Lithgow's department for some time and gave very promising results. The patient died, shortly after treatment, of auricular fibrillation.

Dr. COLLINS: "In this series of cases the question arises as to what is the ideal method of treatment. Each region must be taken separately. In carcinoma of the pharynx and tonsil is radium the best method, or is diathermy of more value? We have treated three or four cases by radium, and, although the local condition has improved, the glands became very definitely enlarged within a short time. It would seem that they received a stimulating dose from the radium. In addition, one must take into account the value of X-ray therapy. We have not had sufficient experience of treatment by this method to assess its value. When one comes to the larynx, the results of treatment of intrinsic carcinoma of the larynx by radium are very good, and one feels it is well worth persevering with this method. I cannot speak of the treatment of carcinoma of the ear with radium. I would urge that in each region one must consider very definitely whether radium is the method of choice, and I think these cases throw light on this subject. Personally, I feel that with carcinoma of the tonsil, and soft palate, radium is not so helpful or so good as diathermy."

Dr. H. ROSS SOUPER: "I should like to ask Dr. Fraser what his views are about the treatment of cervical glands. If enlarged cervical

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glands are definitely present, does he consider that they should be treated separately; if they are excisable, one would prefer that they should be surgically excised, but if not, does he think they should be treated by deep X-ray therapy or by needling with radium? And in those instances in which cervical glands are not palpable when the case comes under observation, would he recommend, as some surgeons do, extensive block dissection of the neck, either before or after treatment of the tumour? In Aberdeen we have seen a good many cases of epithelioma of the fauces and the pharynx generally, in which with the help of the radium officer, who is a specialist, these tumours have been needled with radium and in several instances no neck glands have been palpable. The cases have been carefully watched and followed up at regular intervals. We have had one or two extremely successful results. It has been interesting to note that there has been a successful result in cases in which the neck glands have not been palpable, and no special treatment was directed to the neck. The other question of radium *versus* diathermy: the radium officer at Aberdeen pointed out his views which he had gleaned from some of the radium experts in Sweden. The primary treatment of these cases should be with radium and not by diathermy, the latter being used for local recurrences after primary treatment by radium. It is said that by this method one avoids the risk of breaking down the scar tissue."

Dr. SIMSON HALL: "One is at a loss to understand why one should, as a routine method, employ both diathermy and radium. In Mr. Lithgow's department, radium has been used three times in the pharynx in the same case, with most excellent results in the condition of the patients at the present time. There is a certain amount of prejudice against the reapplication of radium, as the tumours are said to have become insensitive to the application. But one's experience does not bear this out, as far as the pharynx is concerned. I do not see why one should not keep to the same treatment all through."

Dr. FRASER: "Dr. Collins supports diathermy. I have no personal experience of diathermy. All the diathermy work in our department was carried out by Dr. Gardiner, who is unfortunately unable to be here to-day. I have no experience of treating infected glands by radium needles, but cases of mine with enlarged glands have been treated in this way by general surgeons without success. In answer to Dr. Souper, therefore, I think if there are palpable glands they should be removed by block dissection by the surgeon. I have had success in cases of malignant disease treated by radium in which there was a small local recurrence six months later, and in which radium needles were again used with success."

(XI) **C.O.M.S.(R.): Radical Mastoid Operation; Lateral Sinus Thrombosis; Jugular Ligature; Metastatic Abscess in Lung.**—J. S. FRASER.

Margaret R., aged 12, seen 21.10.31 complaining of discharge from the right ear of uncertain duration. On examination a polypus was noted which was apparently coming from the attic region.

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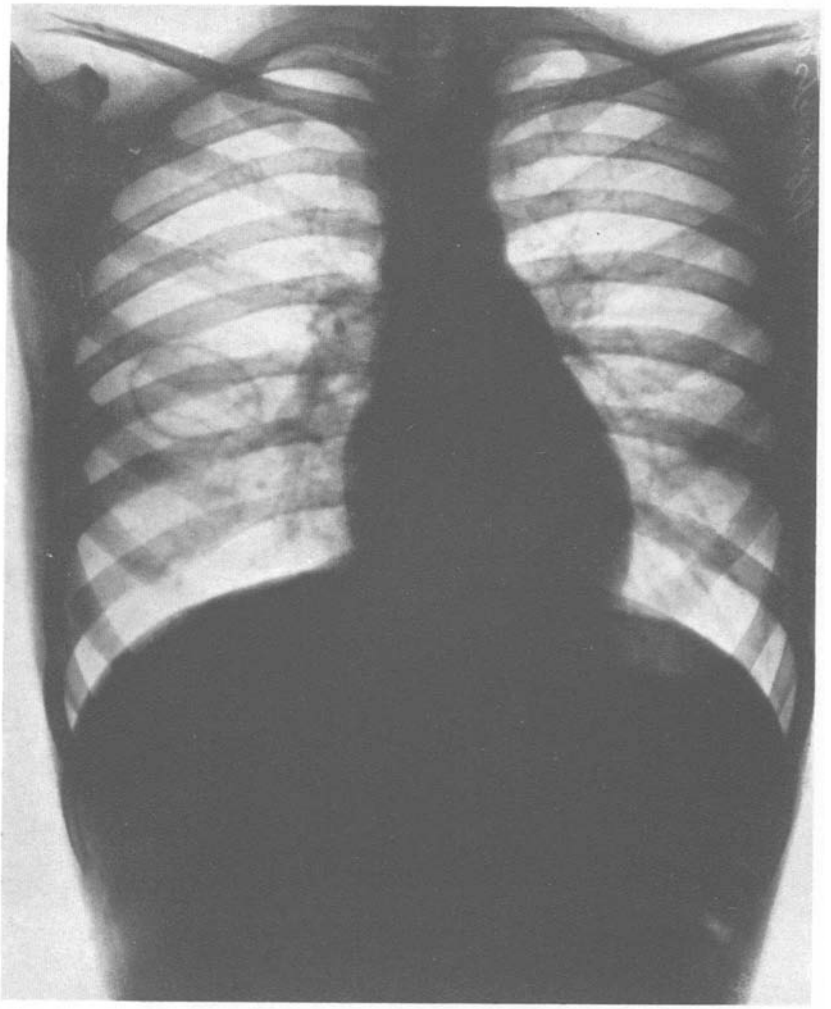


Fig. 3. Case XI.
Margaret R. Radiogram of lung abscess, 22.11.32.

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The patient was not deaf with the noise box in the left ear; cold caloric test obtained reactions from the right ear in 35 seconds. The tonsils were enlarged and submerged and a pad of adenoids was present.

27.10.31.—Under general anæsthesia the polypus was removed from the right ear; it was coming from a perforation in Shrapnell's membrane. The tonsils were enucleated and the adenoids removed.

5.10.32.—The child was admitted as an urgent case, with history of pain in the right ear and vomiting. There was a rigor on the evening before admission. Examination showed a recurrence of the polypus but no mastoid tenderness. The tongue was dry and furred.

6.10.32.—Radical mastoid operation; foul-smelling perisinus abscess. The sinus wall collapsed but soon filled out; cholesteatoma were present in the antrum. As there were apparently healthy granulations on the sinus wall it was not thought advisable to proceed further. The wound was left unstitched. 7.10.32.—Temperature 103° F.; patient feeling cold; excessive vomiting; blood culture—no growth. 8.10.32.—Second operation. Transverse sinus exposed till healthy wall reached; free bleeding obtained from upper end. The clot was removed and the anterior wall of the sigmoid sinus excised. The lower portion of the sinus appeared healthy but there was no bleeding from the side of the jugular bulb.

9.10.32.—The patient was better and sleeping well. 10.10.32.—Temperature 103° F. There was evidence of bronchitis in the right middle lobe; a rigor at night. 11.10.32.—Right internal jugular divided between ligatures; free bleeding from torcular end. 12.10.32.—The patient better; 50 c.cm. of 10 per cent saline given intravenously. 13.10.32.—No shivering or vomiting; again free bleeding from torcular end of sinus and a little pus coming from region of the jugular bulb, behind the internal jugular vein. 18.10.32.—Temperature 102° F. last night; no bleeding from torcular end of sinus; drainage tube in neck wound. There is a very foul odour from the patient's breath. The chest examination is negative. 25.10.32.—X-ray of chest shows large lung abscess in right middle lobe. Bronchoscope passed and pus seen coming out into the main bronchus but it was found impossible to pass the tube into the abscess cavity. Postural drainage of lung abscess was commenced. (Films showed Gram positive cocci and on culture a growth of staphylococcus albus, streptococci and Gram negative bacilli was obtained.) 1.11.32.—Under general anæsthetic an attempt at secondary closure of mastoid wound was made.

Dr. Fraser: "The blood culture in this case was negative. Members would note that the series of radiograms showed improvement in the

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matter of the lung abscess. (Figs. 1, 2, 3 and 4.) If we had dealt with the case by means of bronchoscopic lavage we would have attributed the improvement to this treatment. As a matter of fact, however, only the postural method was used."

(XII) **C.O.M.S. Latent Labyrinthitis? Meningitis: Recovery.**—J. S. FRASER.

Alexander W., aged 27, was seen 4.4.32 complaining of a pain behind the right ear of one week's duration. Patient denied otorrhœa. Examination showed the right drumhead to be pink and bulging. There was no mastoid tenderness. Paracentesis was performed.

13.4.32.—Sagging of the meatal wall. 18.4.32.—Radiograms showed a normal cellular mastoid on the left side and a dense mastoid on the right. The patient was apparently quite deaf with the noise box in the left ear.

19.4.32.—A radical mastoid operation was performed on the right ear; the mastoid was dense; the antrum, aditus and attic contained cholesteatoma; only a trace of ossicles was found; the promontory was healthy; the wound was left unstitched. 22.4.32.—No giddiness or nystagmus; no stiffness of neck; the condition satisfactory. 23.4.32.—The wound was stitched and on 6.5.32 the patient was sent to the Convalescent Home.

14.7.32.—The patient returned to the Out-Patient Department; he has been home and returned to work. He has had several knocks on the head and now complains of severe headache on right side. The radical mastoid cavity is epithelialised except round Eustachian tube; a mucoid discharge present. 21.7.32.—The patient was sent in in an ambulance. His doctor reports that during the last four days the headache increased and vomiting occurred. Temperature 100° F.; pulse 72; the face congested; sordes on teeth; speech is slow. The patient is still absolutely deaf with the noise box in the left ear. There is stiffness of neck present; knee jerks increased on left side; grasps equal; no dysdiadokokinesia; no giddiness; facial paresis (right); pointing test accurate. Lumbar puncture evacuated cloudy fluid under tension (bacteriologist reported many lymphocytes and a few polymorphs; no organisms on culture).

Immediate operation.—Middle fossa dura was exposed and found to be normal; the lateral sinus was also healthy; the gouge was applied to the lateral semi-circular canal, which was found practically obliterated. The promontory was removed; the vestibule contained granulations; translabyrinthine drainage; pus escaped from the internal meatus but there was no flow of cerebrospinal fluid.

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22.7.32.—Headache is still present and facial paralysis more marked: Intravenous saline given. 25.7.32.—The patient much better and temperature normal. 28.7.32. The wound was stitched. 31.8.32.—The patient is very well; facial paresis unaltered.

Dr. FRASER: "In reply to the President, I am sorry I have put a query after latent labyrinthitis. The labyrinthitis was latent for a long time. On 14.7.32 there was a history of a blow on the ear. Patients with chronic ear trouble who get a blow on the head are very apt to get an intracranial complication. Cholesteatoma was found at operation. In reply to the President, I presume that the condition was one of acute exacerbation in a chronic case."

(XIII) **Case for Diagnosis.**—J. S. FRASER.

William K., male, aged 30, was seen on 28.10.32 complaining of pain and deafness in the right ear of six months' duration. Patient denies otorrhœa.

Examination showed plugs of wax and desquamated epithelium in both ears. On the right side there were bleeding granulations present. After considerable difficulty the cholesteatomatous plugs were removed by syringing and the use of forceps. There appears to be just a suspicion of facial weakness on the right side but the patient tastes salt equally well on both sides of the tongue.

Radiograms show a normal cellular mastoid on the left but a dense acellular mastoid on the right.

Treatment was by syringing and the use of spirit and salicylic acid drops. 2.11.32.—The left ear shows considerable dilatation of the meatus; the membrane apparently intact; the condition of the right meatus improved; there appears to be an opening through the posterior wall of the meatus into the antrum. The question is—Is this condition due to cholesteatoma of the meatus eroding the posterior bony wall or is it due to cholesteatoma following chronic middle-ear suppuration?

Dr. FRASER: "In this case I admit that the present condition of the right ear looks like one of chronic middle-ear suppuration. In this case we had for three or four days to use scoops and syringing in order to get rid of the cholesteatomatous material in *both* ears. On the left side the meatus was dilated by the cholesteatoma but the drumhead was intact. I wondered whether it could possibly be that the cholesteatoma of the meatus had been so extensive on the right side as actually to erode the bony meatal wall and open the mastoid antrum."

(XIV) **Case for Diagnosis.**—J. S. FRASER.

Mary McK., aged 33, was seen on 24.10.32 complaining of hoarseness of two years' duration. There has been no pain or difficulty in swallowing and no loss of weight.

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Examination showed the upper aperture of the larynx to be normal; the vocal cords were pinkish, nodular and covered with sticky secretion; there is some inter-arytenoid swelling. Nasal examination is negative. Blood, Wassermann is negative. Physician reports no sign of pulmonary disease.

1.11.32.—Under local anæsthesia a direct examination was made of the larynx and a piece removed from each vocal cord with Pfau's double-cutting forceps. (N.B.—There was considerable hæmorrhage two or three hours after the operation but this soon stopped.) The pathologist reported "Hyperplasia of squamous epithelium and extensive chronic inflammatory and plasma-celled reaction; no evidence of malignancy or of tuberculous infection."

DISCUSSION.

Dr. GAVIN YOUNG: "There is a definite amount of inflammatory change compared with the usual type of inter-arytenoid thickening."

Dr. FRASER: "In reply, I am not sure whether there was an X-ray of the chest in this case, but the patient looked very healthy for a tubercular patient and the physician reported no sign of pulmonary disease.

Probably the case was one of hypertrophic laryngitis but I did not want to overlook the possibility of malignant disease or malignant transformation of a simple laryngitis."

(XV) (**Specimen.**)—**C.O.M.S. Sigmoid Sinus Thrombosis (L.); Metastatic Parietal Lobe Abscess; Death.**—J. S. FRASER.

James A., aged 15, was seen on 4.3.32 complaining of chronic middle-ear suppuration (left) and pain for three days.

Examination showed a large kidney-shaped perforation of the left drumhead. Conservative treatment was advised. In spite of this a profuse discharge and pain continued.

31.3.32.—The Schwartze operation was performed on the left ear (J.S.F.); a small extra-dural perisinus abscess found; the sinus wall showed red granulations; on being indented with a probe, the curvature at once returned to normal. There was no foul-smelling pus or cholesteatoma. The wound was packed and left unstitched.

4.4.32.—No fever; wound looking inactive; meatal discharge continues. 8.4.32.—A rise of temperature and the wound full of pus. 12.4.32.—Modified radical mastoid operation (Dr. Gardiner). 14.4.32.—Blood culture—hæmolytic streptococci present. 15.4.32.—Temperature 103° F.; anti-streptococcal serum given on April 16th, 17th and 18th. 22.4.32.—Third operation (J.S.F.).—The lateral sinus was further exposed; the sinus opened and mural clot removed (pathologist reported later—necrotic material on

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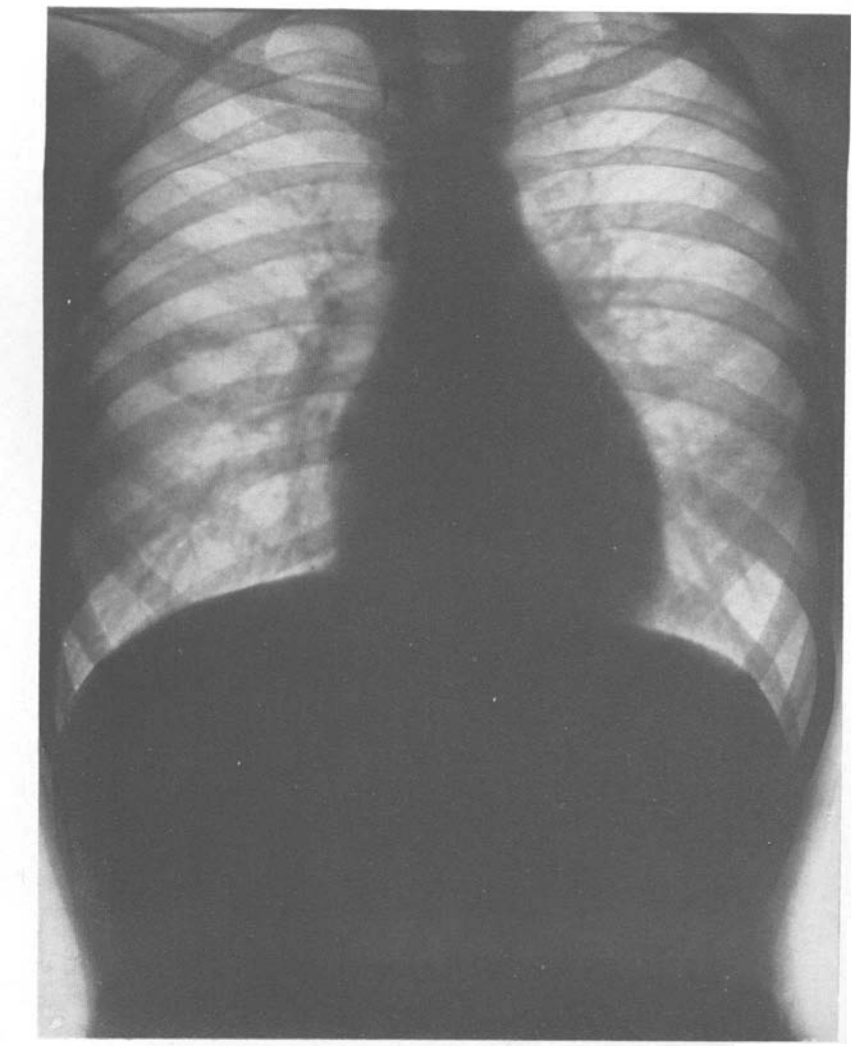


Fig. 4. Case XI.
Margaret R. Radiogram of chest, 11.1.33.

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wall of sinus, i.e. septic thrombosis). 25.4.32.—Evening temperature 102·4° F. 26.4.32.—Internal jugular vein ligatured; both veins appeared perfectly healthy. 28.4.32.—50 c.cm. of 10 per cent saline were given intravenously. 1.5.32.—The patient was listless; with marked weakness of the *left* arm and leg, i.e. the same side as disease; pupils equal and react; no spontaneous nystagmus; Babinski sign present in the left foot, with marked ankle clonus; abdominal reflexes absent. The patient was not deaf with the noise box in the right ear. It was thought possible that a cerebellar abscess on the left side might be the cause of the symptoms described above.

1.5.32.—Fifth operation; incision through posterior wall of sinus, clear cerebrospinal fluid escaped; exploration for cerebellar abscess negative. 2.5.32.—Examination by physician showed complete loss of sensation to pain in left arm and leg; patient able to raise his eyebrow so that the lesion appeared to be above facial nucleus. The condition was considered to be due to an embolus affecting the lenticulo-striate artery on the right side. 3.5.32.—Death.

The *post mortem* showed a large abscess of the parietal lobe on the right side and also basal meningitis. There was no thrombosis of the jugular vein. There was no growth from heart blood but hæmolytic streptococci were obtained from the meninges.

Dr. Collins reported having had two cases of metastatic brain abscess. One was a boy of 19 years who was pierced by a stick under the right eye and who developed an abscess in the left temporo-sphenoidal lobe. The other case was one of chronic otitis media of the right ear, who developed multiple metastatic abscesses of the brain. One was situated in the left frontal, one in the left temporo-sphenoidal and one in the right parietal region. It was a puzzling case for diagnosis. There was such a confusion of signs and symptoms.

(XVI) (**Specimen.**)—**Tertiary Syphilitic Disease of Larynx and Trachea.**—Dr. J. S. FRASER and Dr. DAVIDSON.

Winnie W., aged 15, was seen on 29.1.32, when examination showed crusting in the nasal vestibules; the tonsils were not enlarged and there were no adenoids.

21.3.32.—The patient was admitted with dyspnœa and epistaxis. Laryngoscopy showed false membrane in the cavity of the larynx; patient was sent to the City Hospital as a case of diphtheria but swabs proved negative and the patient was discharged.

15.4.32.—The patient was sent back to the Ear and Throat Department. Temperature was 101° F.; the sputum was blood-stained and the tongue superficially ulcerated. Cultures showed

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streptococcus hæmolyticus, staphylococci and diphtheroids but no spirochætes or fusiform bacilli. Dr. Logan stated that the condition seemed to be due to a reduced resistance rather than to any specific infection. The condition resembled scurvy.

28.5.32.—Direct examination of the larynx and trachea was rendered difficult by excessive bleeding; 2 c.cm. of hæmolytic streptococcal serum were given intravenously; this was followed by collapse and the patient was treated by adrenalin and pituitrin.

3.6.32.—The child was sent to the Astley Ainslie Institution, where it was found that there was ulceration of the pharynx and blebs in the mouth and nose. The Wassermann reaction was + + + on two occasions (11.6.32 and 18.6.32), but subsequent examination, before any anti-syphilitic treatment was given showed that the reaction was negative (7.7.32). Mr. Lees and Dr. Mary Liston saw the child and were very sceptical as to the condition being syphilitic. However, " 914 " was given on 14.9.32.

18.8.32.—Blood count: Hæmoglobin 60 per cent, R.B.C. 3,300,000, W.B.C. 5,800.

6.10.32.—One hour after the fourth injection of Neo Kharsivan the patient developed dyspnœa and died.

Post mortem.—Well marked œdema glottidis was present and the laryngeal orifice was considerably narrowed. The lower half of the epiglottis, on its posterior surface, showed an ulcerated, hyperplastic mass of granulation tissue. The whole of the mucosa of the larynx and trachea was markedly ulcerated, and had almost entirely disappeared from the trachea. Formation of scar tissue was present and there was also what appeared to be the remains of a false membrane in certain areas. The ulcerated, necrotic tissue of the larynx and trachea was covered by a blood-stained exudate. These mucosal changes extended as far as the bifurcation of the bronchi. (Fig. 5.)

Both lungs on section showed different distribution of blood-stained areas of inspirated blood.

The left kidney in its lower half showed a gumma about the size of a shilling. Scattered throughout the remainder of the kidney tissue were numerous smaller gummata. The right kidney showed numerous pin-point gummata scattered throughout.

The lymphatic glands throughout the body were considerably enlarged.

Dr. Davidson demonstrated lantern slides of micro-photographs from the trachea and kidneys. These slides showed very definite specific cellular reaction. In the kidney small, recent gummata were demonstrated as well as a large gumma showing extensive fibrosis. He also discussed the Wassermann reaction. It was interesting how it apparently changed from being strongly positive to

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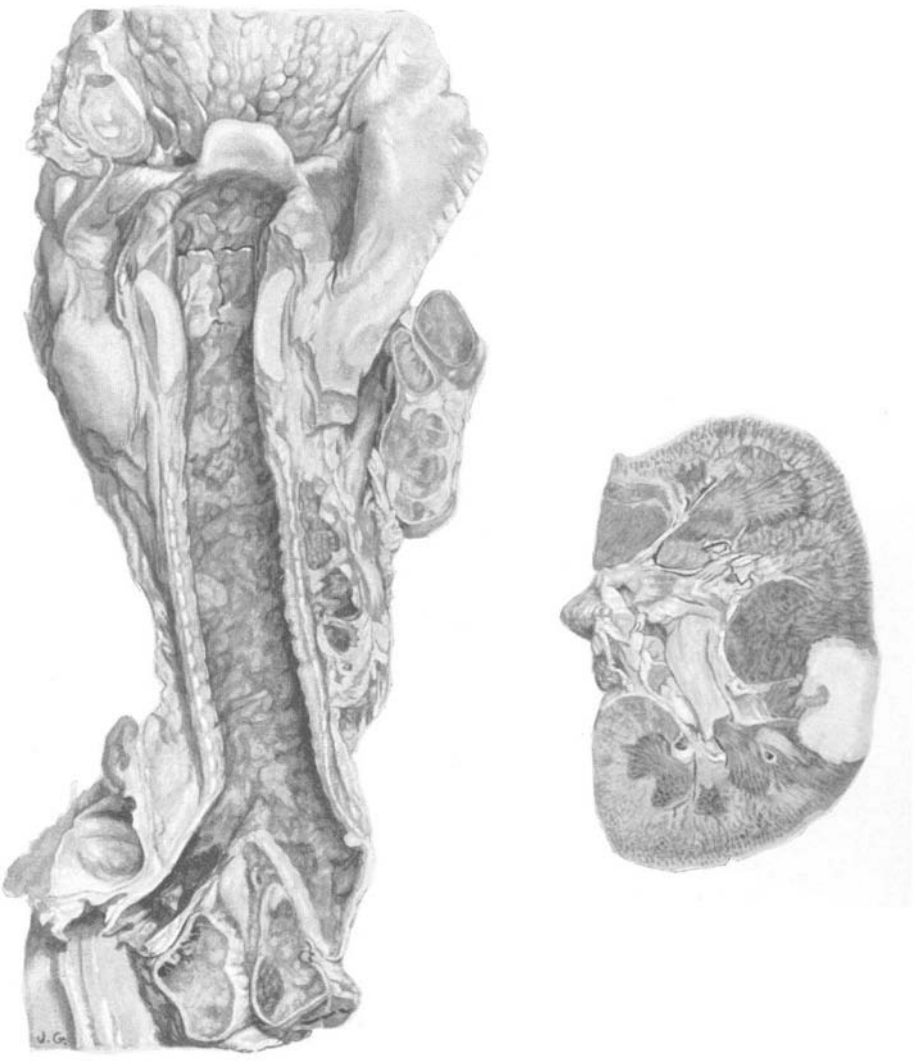


Fig. 5. Case XVI.

Winnie W. Wash drawing of larynx and trachea showing ulceration of the lower air passages with enlarged mediastinal glands. The left kidney shows a gumma.

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negative. When the Wassermann was strongly positive the girl was very ill, but as she improved it gradually disappeared. One might explain that phenomenon by the fact that the specific infection was settling down. However, no Wassermann was taken for two months before death, but it would have been interesting to have known the reaction at this time.

(XVII) **C.O.M.S.(R.); Radical Mastoid Operation; Extradural Abscess in Middle Fossa; Meningitis; Temporal Lobe Abscess. Recovery.**—J. S. FRASER and W. T. GARDINER.

A. T., female, aged 27, was admitted to the medical ward on 3.4.32. It was stated that for a week prior to admission the patient had had an influenzal cold associated with exacerbation of chronic middle-ear suppuration on the right side. On the previous evening at 10 p.m., she had a " fit ", followed by numerous others. The patient has been more or less unconscious since then. The patient is four months pregnant.

Examination showed that the patient lay curled up in bed; there was clotted blood in the mouth; the pupils were contracted but equal and reacted to light; a suspicion of neck stiffness; Kernig positive; a purulent discharge in the right ear but, as the patient resisted examination, further details were not visible. Temperature 100° F.; pulse 88. The patient was admitted to the medical ward as a possible case of eclampsia. The physician reported albumin and sugar in urine, and turbid cerebrospinal fluid on lumbar puncture (2,000 cells per c.mm.; 78 per cent polymorphs; cultures sterile). Blood examination—leucocytosis 13,400.

8.4.32.—The general condition was as before, with a sagging of the right meatal roof with foul discharge. *Radical mastoid operation* performed (J.S.F.). A large extradural abscess in the middle fossa was evacuated; pinkish granulations on the dura, which was not tense; radical operation completed. Lumbar puncture evacuated cloudy fluid under considerable tension.

11.4.32.—The patient mentally brighter but there has been some twitching of left hand; no fever. 12.4.32.—Examination by Dr. Gardiner in the absence of J.S.F. The patient was unconscious; left pupil pin-point; right pupil more dilated; the patient clutching the right side of the head with her hand; temperature subnormal and pulse slow. The packing was removed from the radical mastoid cavity and gas escaped, along with pus from a pinhole opening in the dura; temporal lobe abscess was opened and 2 oz. of pus evacuated (bacteriologist reports anærobic organisms including fusiform bacilli, leptothrices, spirillae and slender Gram negative cocco-bacilli; the only ærobic organisms obtained were diphtheroids and staphylococcus albus). A Lemaitre tube

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was inserted. 13.4.32.—The general condition was excellent; pupils equal and normal. 24.4.32.—A larger drainage tube was inserted into the abscess. 27.4.32.—The patient has an enormous appetite. 2.7.32.—The patient was sent to the Astley Ainslie Institution. 17.2.33.—Now doing well.

(XVIII) **Laryngeal Paralysis.**—J. D. LITHGOW.

Robert D., aged 68, was first seen on 25.10.32. He gave a *history* of difficulty in swallowing for one year, which was worse with fluids, and of hoarseness and dysphagia.

Examination shows fixation of the left cord. Two hard glands can be felt above the clavicle.

2.11.32.—*Examination by œsophagoscope.* Mass at 20 cm. from the teeth; impermeable.

The *Treatment proposed:* Gastrostomy followed by deep X-ray therapy, followed by radium treatment.

(XIX) **Tuberculosis of Larynx.**—J. D. LITHGOW.

David F., aged 42, was first seen on 7.4.32. Patient gave a history of hoarseness and loss of voice for two months, with a slight cough for the same period. Definite evidence of tuberculosis was not found in lungs.

(XX) **Hæmatoma of Peritonsillar Space.**—J. D. LITHGOW.

Christian McD., aged 22. On October 25th, 1932, patient was referred by doctor who observed bleeding taking place from a small sinus in the upper part of the tonsil. A large clot was found to occupy the peritonsillar space, and was evacuated. Bleeding continued for a short period, but has now improved. There is some infection now of the peritonsillar region, and the tonsils are to be removed.

(XXIV) **Primary Tuberculous Ulcer of Pharynx.**
—I. SIMSON HALL.

George McC., aged 21, was first seen on 1.2.32. Examination showed a large tuberculous ulcer involving the hard palate, soft palate, tonsil, alveolus, and edge of the tongue. Tubercle bacilli could be recovered from the saliva and from swabbing the ulcer. Trismus was marked. There was difficulty in swallowing. The duration of present complaint—one year.

Treated by diathermy on four occasions. Patient is receiving open-air treatment in the Royal Victoria Hospital.

There is no evidence of tuberculosis in the lungs or other part of the body, and this condition is regarded as a primary tuberculous ulceration of the pharynx.

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Dr. SIMSON HALL said when this patient was first seen he was in a very serious condition and was going down hill very rapidly. The condition in the mouth was that of an extensive ulcer spreading all over one side of the mouth and soft palate. There was also doubt regarding the condition of the bone, although the radiologist reported that the bony structure was healthy. Almost all the teeth in the upper jaw have now had to be removed as they became loose.

(XXV) **Simple Giant Celled Tumour of Jaw.**
—I. SIMSON HALL.

Robert S., aged 9, was first seen on 4.6.31. He had a large swelling of the right upper jaw, about the size of a small walnut, with the centre about the first premolar; this extended on to the face and there was a considerable amount of swelling of the tissues covering the maxilla. There was a marked profuse discharge from the right side of the nose. Histological examination showed the characteristics of simple giant celled tumour. Deep X-ray therapy previously failed to cure the condition.

8.12.31.—As the radiologists reported that no progress was being made, radical operation was decided upon. A partial removal of the right upper jaw was made without encroachment upon the nasal passage. The cavity was filled by various obturators.

There has never been any difficulty with speaking or feeding, as the nasal cavity was not opened. The patient now wears a plate for the upper jaw; otherwise perfectly well. (Specimen shown.)

(XXVI) **Mastoiditis with Spinal Meningitis and Abdominal Abscess.**—I. SIMSON HALL.

James W., aged 9, was first seen on 22.10.31. He was admitted with acute otitis media and mastoiditis. Right *Schwartze operation:* The wound and ear did not clear up well. He was discharged to convalescent home.

30.11.31.—Re-admitted with a history of sickness and headaches; drowsy, temperature 101°, pulse 130. Neck rigidity, Kernig sign present, acetonuria. Lumbar puncture, fluid opalescent and rather thick. The wound is perfectly healed and dry, but there is a slight discharge from the meatus. The hearing is fairly good. There is very slight nystagmus to the left.

7.12.31.—Still running a temperature, but very definitely better.

14.12.31.—Neck slightly stiff and slight limitation of neck movement. Patient transferred to Astley Ainslie Institution.

21.12.31.—Patient re-admitted. Marked neck rigidity and spasm of lower limbs present—no pain. Mentality perfectly clear. No paralysis or other neurological sign. The ear is dry; the wound healed and hearing good.

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Lumbar puncture before leaving Astley Ainslie Institution gave true pus, showing streptococci. Lumbar puncture failed to obtain fluid.

Cistern puncture: Fluid perfectly clear. Increase of cells and globulin. No organisms. Neck rigidity and Kernig sign very much less after cistern puncture. Cistern puncture repeated on four occasions, each time being followed by greater improvement in neck and leg rigidity. Mentality clear.

4.1.32.—Patient complaining of acute pain in the legs. Temperature settling.

14.1.32.—Patient still complaining of acute pain in legs, necessitating opiates. Neck still rather stiff, but improved. There is now marked contracture of both legs, especially the left.

21.1.32.—Less pain, but contracture more marked. Referred to Mr. R. I. Stirling for advice regarding condition of legs. Patient was put up with extension by weight and pulley.

2.2.32.—The legs now very much straighter. The patient complains of severe pain in the left hip.

20.2.32.—Still complains of pain in left hip. Marked constipation. Extension has had to be discontinued.

10.3.32.—Slight swelling left groin.

25.3.32.—Swelling obvious, resembling psoas abscess. Patient transferred to Wards 17-18. *Operation.*—Large abscess found extending up the posterior abdominal wall to at least the level of the diaphragm. The pus was found to contain streptococci.

Patient has since improved rapidly and has been at school for some months.

Dr. SIMSON HALL: "There are one or two points of interest here. First, lumbar puncture yielded pus showing streptococci, whereas cisternal puncture was found to be sterile and clear. One wonders whether spinal meningitis was an extension of an earlier cerebral meningitis which cleared up. And the other point—What was the origin of the abdominal abscess? The surgeon diagnosed psoas abscess without hesitation and on opening the abscess the pus showed streptococci."

Demonstration of X-ray Films illustrating the use of Opaque Media in the Diagnosis of Sinusitis.

—I. SIMSON HALL.

Dr. DOUGLAS GUTHRIE: "In what position does Dr. Hall place the patient's head while introducing the lipoidol to take his X-ray films? Is it the Rose position? What suction apparatus does he use, and does he exercise any manometric control over the pressure?"

Dr. SIMSON HALL said the majority of the films shown were obtained by use of the displacement method. In carrying out this technique the directions given by Proetz were followed in most of the

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cases. The simplicity of the method is one of its strongest arguments as the patient has no discomfort, apart from a little oil in the nose, on leaving hospital. There is a great division of opinion upon the value of such procedures, and it was for that reason that he thought it might be of value to obtain the opinion of members of this Society. After one examined the writings on this particular subject one found that most of those who tell us that it is unnecessary are radiologists and that their statements usually take the form that if a radiograph is perfect it should be unnecessary to add anything in order to make a diagnosis. No doubt this is true in the opinion of these writers, but we have to rely for a certain proportion of our work upon technicians and learners, who are not always equipped with the best of apparatus. The majority of these writers also confine themselves to diagnosis pure and simple. Problems of treatment and prognosis, which naturally occur to the rhinologist, do not exist for the diagnostician. In these days when conservatism in surgery is definitely the tendency, it seemed to him that one of the most favourable aids obtained from this particular method was the estimation of the suitability of an individual case for conservative treatment. However accurate a diagnosis is given regarding the state of a particular sinus or cell, no radiologist is competent to give an opinion as to whether the ostium is patent or not. On the other hand we know that if opaque oil can enter a sinus or cell, then just as certainly can medicaments of one kind or another be made to enter. Again, the emptying time of a sinus is one of the surest guides to its functional efficiency. By knowing the emptying time of the normal sinus of the opaque medium, individual cases can be compared and an estimation of the activity of the cell made, which is of real value in planning treatment.

Specimen of Temporal Bone from an Infant aged two months, showing Septic Thrombosis of the Right Lateral Sinus and Right and Left Cavernous Sinuses.—C. E. SCOTT.

Dr. SCOTT (in reply to the President): "So far the youngest age I can find quoted is nine years. There are quite a number of such cases in literature, but unfortunately in several series of those cases, no ages were given. I am, however, still going into the literature, as I intend to publish this case in the *Journal*. In reply to Dr. Souper: the child was admitted in an almost moribund condition and it had been ill only for three days. It died from pneumococcal infection. Only the right eyeball was proptosed."

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