SOCIETIES' PROCEEDINGS

SCOTTISH SOCIETY OF OTOLOGY AND LARYNGOLOGY

ROYAL INFIRMARY, EDINBURGH

November 28, 1931

Vice-President—Dr. M. J. GIBSON

CASE 1. **Bilateral Mastoiditis and Perisinus Abscess, without perforation of either Tympanic Membrane**—DOUGLAS GUTHRIE and C. E. SCOTT.—A. S., aged 3, had pain in the left ear five days before admission. Child listless and drowsy. Temperature on admission 103° F.; pulse 168. Slight mastoid tenderness; no œdema. Left tympanic membrane lacks normal lustre, but no redness. Right tympanic membrane normal.

First Operation, 6.6.31.—Mastoid cortex normal, but pus under tension in large apical mastoid cell. Mastoid process more cellular than is usual at this age. Necrosis of bony plate over lateral sinus, and perisinus abscess the size of a hazel-nut. Granulations on small area of sinus wall. Sinus otherwise normal.

10.6.31.—Still rather ill and somnolent. Temperature 101° F. Pain in right ear but tympanic membrane appears normal. Mastoid tenderness.

Second Operation, 11.6.31.—Condition in right mastoid process corresponding exactly to that of left side at first operation, with perisinus abscess and granulations on sinus wall.

12.6.31.—General condition much improved. Temperature 99° F. Subsequent progress to complete recovery.

The VICE-PRESIDENT (Dr. M. J. Gibson): "I have several times operated on cases of mastoid disease with a normal drum-head and normal hearing, but I would not guarantee that the drum-head had been normal all the time."

Dr. GUTHRIE, replying to Dr. Gavin Young, stated that the organism was found to be the streptococcus, but the exact strain had not been determined.

CASE 2. **Suboccipital Abscess as a further complication in a case of Mastoiditis with Lateral Sinus Thrombosis**—DOUGLAS GUTHRIE and C. E. SCOTT.—J. R., aged 11. Discharge from right ear, "off and on" for four years. Three days before admission complained of earache, headache and giddiness. No vomiting. Profuse discharge from ear. Day before admission discharge ceased, and at 11 A.M. and again at 2 P.M. he had a severe rigor, with profuse

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

perspiration. Temperature 105°; pulse 152; mastoid slightly tender; no œdema; enlarged tender glandular swelling behind angle of jaw; large central perforation of right tympanic membrane.

First Operation, 8.4.31.—On removing mastoid cortex, entered large cavity containing thin, dark green, fœtid pus. Sinus wall gangrenous. The sinus was followed backwards, and was packed when healthy tissue was reached. Jugular vein ligatured in neck; tube inserted in upper end and washed through. For a week after operation the temperature continued to oscillate daily. Fever accompanied by perspiration, but no rigors. When packing was removed from upper end of sinus on fifth day, there was slight hæmorrhage. Owing to continued fever it was decided to explore the sinus again.

Second Operation, 15.4.31.—On exposing the upper end of lateral sinus more widely, it was found that thrombosis had extended. Vessel repacked further back, in healthy area. Wound in neck satisfactory. Bacteriology—streptococcus. Only slight improvement followed the operation. Four days later temperature rose to 103.5° with slight rigor. Collosol manganese given with apparently good effect.

22.4.31.—Temperature again rose to 103°, and patient complained of pain in occipital region. Tender swelling behind sternomastoid, obscuring the normal suboccipital hollow.

Third Operation, 23.4.31.—Vertical incision between mastoid and occiput, and subsequent blunt dissection, opened an abscess containing half an ounce of fœtid, green pus. During manipulation pus welled up through the tube which had been introduced into the jugular bulb from above.

27.4.31.—Temperature falling since last operation and now normal. Abscess cavity draining well. Mastoid wound clean and granulating. On washing through bulb the fluid was clear. Packing has been removed from upper end of sinus.

Dr. GUTHRIE, in reply to Dr. Logan Turner, said that he thought that the infection must have been conveyed by a venous channel, because pressure on the abscess from without caused pus to issue freely from the jugular bulb. It was, as Dr. Gibson suggests, an embolic abscess.

Dr. D. RITCHIE PATERSON: "May I say that upon examining this child I noticed that covering the whole skin of the nose from tip to root, but not extending on to the face, was a mass of little sweat beads. I questioned the mother who said she also had noticed this since the child's recovery from illness and that she had not noticed it before. I have drawn attention to the fact that in lateral sinus thrombosis I have noticed before operation a *homolateral hemipallor* of the face in some cases which I believe is likely to be due to changes in the sympathetic nervous system. I would like to know if the presence of localised sweating or other skin manifestation has been noted in connection with lateral sinus thrombosis, since this might be of use in the diagnosis of this complication of

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

mastoiditis. I congratulate Dr. Guthrie upon the excellent recoveries in these cases."

Dr. GUTHRIE, referring to Dr. Paterson's remarks, said that the effect on the sympathetic nervous system, as indicated by the presence of unilateral sweating, in cases of lateral sinus thrombosis, was certainly worthy of further investigation.

CASE 3. **Lateral Sinus Thrombosis, with Metastatic Infection of Hip Joint**—DOUGLAS GUTHRIE and C. E. SCOTT.—Recovery after long illness and seven operations. Patient's chart, photographs and radiograms will be shown. This case was fully reported in *British Medical Journal* of 25th July 1931, and is difficult to epitomise. There were three operations on the sinus, three on the hip joint, and one for cervical abscess.

Synopsis of Events—24.9.30.—E. G., aged 8. Discharge from left ear for two years; tonsils and adenoids removed six months ago; vomiting, headache and fever for a week; rigor day before admission; no mastoid signs; admitted to hospital. 24.9.30, 9 P.M.—Operation on mastoid and sinus.

2.10.30.—Operation on upper end of sinus, clot found. 8.10.30. —Operation on jugular vein; ligatured lower down, no clot. 9.10.30.—Œdema of right eye. 10.10.30.—Blood transfusion, 150 c.c. 12.10.30.—Œdema extended to scalp. 13.10.30. —Operation on arthritis of hip, and second blood transfusion. 14.10.30.—Packing removed from upper end of sinus. 4.11.30.—Operation: necrosed head of femur removed. 12.11.30.—Operation: hip joint explored and thigh abscess opened. 25.3.31.—Operation: abscess of neck incised.

CASE 4. **Intrinsic Cancer of Larynx treated by Radium**—W. T. GARDINER.—J. C., male, aged 65. History of hoarseness and loss of voice for five months. No pain on, and no difficulty in, swallowing. Has been losing weight. Seen 3.8.31.

On examination of the larynx there is a curious sloughing ulcer involving the left false cord and true cord; coming from the ventricle there is a pinkish projection in the nature of a granulation; there is a certain amount of fixation of the left cord. It was considered that the case was malignant and that the patient should have radium. Other examination was negative.

6.8.31.—Under general anæsthesia the incision was made in the middle line of the neck, the left thyroid ala was exposed; window resection made and then six 1 mgrm. radium needles were inserted diagonally. 7.8.31.—There is a slight œdema of the left arytenoid cartilage and the left false cord, and a little discomfort on swallowing. 14.8.31.—Radium needles removed (1152 mgrm.-hours). 19.8.31.—There is a fair amount of swelling in the region of the left arytenoid cartilage and also the true cord, but the malignant condition would

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

seem to be subsiding. When seen at Hawick the condition appeared to be cured. W.R. was negative. Heart and lungs were normal for his age.

CASE 14. **Epithelioma of the Left Cord (Radium)**—J. D. LITHGOW and I. SIMSON HALL.—J. R., aged 72. First seen 10.1.31. History of hoarseness for six weeks. Epithelioma involving the anterior end of left cord. Window operation, eight needles of radium inserted for seven days.

CASE 15. J. D. LITHGOW and I. SIMSON HALL.—A. W., aged 60. First seen 6.8.31. Difficulty in swallowing for six months. Can only swallow liquids. Shows a mass involving epiglottis, lateral wall of pharynx, base of tongue. Œdema of right arytenoid, œdema of epiglottis. Marked enlargement of glands right side. Case inoperable and too extensive for radium treatment. Treatment by deep X-ray therapy by Coutard's method.

Site of growth now occupied by yellowish slough. No evidence of growth to be seen. Œdema of epiglottis and arytenoids remains. Patient can now swallow anything. Tongue movements are freer and articulation improved. Glands in neck very much improved.

CASE 18. **Cancer of Vocal Cords treated by Radium (two cases)**—J. S. FRASER.—A. K., male, aged 70. Seen 29.6.31. History of hoarseness of three years' duration. Patient has slight glycosuria.

Laryngoscopy shows large, red, smooth swelling of right vocal cord, which does not move on phonation; anterior end of left cord also affected, but this cord does move; no enlarged glands felt; Wassermann reaction negative. Biopsy (right vocal cord). Report: squamous epithelioma. In view of bilateral involvement of vocal cords, laryngectomy advised but refused by patient.

9.7.31.—Local anæsthesia: isthmus of thyroid cartilage exposed; window resection of both thyroid alae, leaving narrow piece of cartilage in middle line; six radium needles inserted vertically in each side, in contact with internal perichondrium. Tracheotomy not performed. 13.7.31.—Needles removed (1152 mgrm.-hours).

21.7.31.—Patient sent to Convalescent Home. 9.9.31.—Report on patient: "both arytenoids and cords move well; left cord satisfactory; still pink swelling at posterior end of right true cord."

CASE 19.—Mrs. M. W., aged 84, seen 16.3.31. Hoarseness for over one year and slight breathlessness. Laryngoscopy shows right vocal cord normal but irregular growth involving left cord; ulceration present; left arytenoid, however, moves fairly well. 27.3.31.—Biopsy report: squamous epithelioma.

2.4.31.—General anæsthesia (chloroform): window resection of right thyroid ala; eight radium needles (each 1 mgrm.) inserted in the

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

usual way; no tracheotomy. 4.4.31.—Indirect laryngoscopy shows dark red swelling of left arytenoid, ary-epiglottic fold and false cord, probably hæmatoma. 8.4.31.—Radium removed (1152 mgrm.-hours).

18.4.31.—Patient went home. 4.9.31.—Present report on patient: "no sign of any ulceration; both vocal cords move well; left vocal cord shows a somewhat mouse-eaten appearance."

The writer has treated nine cases of intrinsic cancer of the larynx by radium. Of these, six are known to be alive and so far show no evidence of recurrence. One patient is in New Zealand, and no news has been received from him or his doctor for six months. One of the fatal cases also suffered from pulmonary tuberculosis: in his case radium did not effect a cure, and Mr. Wade later performed laryngectomy; the patient died a week later. The other fatal case was not a very suitable one for radium, the disease being too widespread. He required a tracheotomy six months after operation, and is now dead.

The VICE-PRESIDENT: "I think the exhibitors are to be congratulated on the very excellent results in these cases. I suggest that we see them at a future meeting."

Dr. GAVIN YOUNG: "Some of you may remember at the Meeting at the Western Infirmary last year, one of the cases shown by me was a case of cancer of the larynx. The cancer was extending backwards on to the arytenoid. One had carried out the fenestration technique and the point was raised then: Was fenestration a suitable technique to carry out in these cases? Was it not really the technique to be carried out in cases suitable for laryngo-fissure? I think Dr. Fraser said that. I differed from him at the time. It seemed to me that the fenestration method would carry the irradiation further back than laryngo-fissure. The case shown at the Western Infirmary has done consistently well, although it was far beyond the usual type of case for laryngo-fissure. The first case, No. 4, seems to bear this out. The growth extended a good deal further than one usually considers suitable for laryngo-fissure. In No. 14, there is definite evidence of a growth, anteriorly below the left cord, which may be only granulation. It looks very suspicious."

Dr. LOGAN TURNER suggested that these cases should be shown at intervals. The whole question of radium as an alternative to laryngo-fissure was illustrated by these cases which we had just seen. There was no doubt that with radium treatment the patient's voice was much better than that following laryngo-fissure. Dr. Fraser had treated nine cases of intrinsic cancer of the larynx with radium. Of these, six were known to be alive. Owing to Dr. Fraser's unavoidable absence they were without information as to the number of years that had elapsed since these six cases were under treatment.

Dr. GUTHRIE, referring to Case 18, said that he had seen this patient several months before he came under Dr. Fraser's care, and had corresponded with Dr. Brown Kelly, who had seen him three or four years previously, regarding the earlier history. There was at that time considerable doubt as to the exact diagnosis, and although it was apparently quite

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

definite now, the growth appears to have been of very low malignancy and slow development.

Dr. GARDINER said on behalf of Dr. Fraser that at least two of the six cases are alive three years after treatment and others for at least two years.

Dr. HARPER: "I would like to congratulate the members who are showing these cases on their very excellent results. I am inclined, however, like Dr. Logan Turner, to ask that these cases be shown at a later date. It is far too early to say that they have been cured of malignant disease of the larynx. I do not think that we can come to a definite decision regarding the true value of radium in such cases until we have a large number of cases extending over a longer period. Only then can we compare the two methods—laryngo-fissure and radium."

Dr. MARTIN: "One finds in cases in which a small epitheliomatous growth is limited to one cord that it is difficult to decide whether one should use radium, or whether one should remove the part of the cord infected through the laryngo-fissure. Certainly, from the vocal point of view, the result is better with radium, but we have not yet had sufficient experience with radium to say whether the cure is a permanent one.

"Might I suggest that the use of radium as opposed to laryngo-fissure be the subject of one of our discussions? Members might bring forward a summary of their cases treated by both radium and laryngo-fissure."

The VICE-PRESIDENT: "There is one point which the two cases of Dr. Fraser's brought to mind—neither of them looked good subjects for a laryngo-fissure operation. They were old people, and if one can relieve them as easily with radium, as Dr. Fraser appears to have done, it is a very important point."

Dr. HARPER: "Is there less surgical risk in the treatment with radium than by laryngo-fissure? The suggestion has been made that we should use radium because it is the safer method. I do not agree with that. I think it is the other way round."

The VICE-PRESIDENT: "Personally, I do. It is my suggestion."

Dr. MARTIN: "The immediate risk is greater with radium."

Dr. SIMSON HALL: "You may get a laryngo-fissure case out of bed in two to three days. Radium cases have all to be watched for several weeks."

CASE 5. **Chronic Middle-Ear Suppuration (L.): Latent Labyrinth Suppuration: Radical Mastoid Operation: Meningitis: Hinsberg Labyrinth Operation: Translabyrinthine Drainage**—W. T. GARDINER.—H. F., male, aged 29. First seen 24.8.31. History of discharge from left ear for three months. Deafness, and some pain and headache on left side. Pain had started four weeks previously when there was some vomiting and giddiness. Had had "stiffness" of left side of face for a fortnight.

On examination a partial facial paralysis on the left side. The left tympanic membrane showed a granulation at the inner end. Weber

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

was apparently lateralised to the right, and Rinne was negative on the left side. The right tympanic membrane was retracted. Was apparently stone deaf in the left ear, with noise box in the right. There was a coarse nystagmus to the left. There was no past-pointing on the left side, slight error on the right side. No dysdiadokokinesia. No fistula symptom. In view of the very coarse and varied nystagmus it was considered that the patient might have a cerebellar abscess and he was, therefore, examined by Dr. Ritchie Russell who could find no evidence of any cerebellar abscess and any signs detected could be explained by a degree of encephalitis involving the cerebellum in the neighbourhood of the ear disease and to the sympathetic or serous meningitis which was probably also present.

Operation.—Under general anæsthesia the usual incision for radical mastoid operation was performed, as one felt that there had previously been some suppuration in this ear. When cutting down to the bone the periosteum appeared to be thickened and what seemed to be an old fistula was found. The bone was sclerotic and in parts diploëtic, and here it seemed to be inflamed, but no actual pus was found. When the antrum was opened there was a little pus and the tympanic cavity was full of granulation tissue, and in the anterior end of the horizontal canal a fistula was found with sprouting granulations. As the labyrinth was apparently dead, it was decided to perform the Hinsberg operation, especially as the patient's temperature (normal on admission) had risen to 101° this morning. By opening the horizontal semicircular canal a good opening into the vestibule was obtained, and knocking off the promontory through and through communication between the vestibule and the promontory was obtained. Lumbar puncture after operation—fluid not under pressure but a little cloudy. Report on C.S.F.: "The direct smears showed a number of endothelial cells and polymorphs, but no organisms could be found."

Patient was treated by repeated lumbar puncture. Further examination of C.S.F. produced no growth.

A little trouble from hæmorrhage at plastic operation: one or two further attempts at closing wound: patient discharged to Astley Ainslie Institution on 29.9.31.

CASE 11. **A.S.O.M. (Left): Schwartze Operation: Radical Mastoid Operation: Acute Purulent Manifest Labyrinthitis: Double Vestibulotomy: Recovery**—R. B. LUMSDEN.—R. F., aged 22, male. 31.8.31.—Discharge from left ear, six weeks' duration, following a cold.

Examination. — Left ear profuse mucoid discharge; posterior perforation showing granulations; bulging; cannot perform Valsalva's experiment; paracentesis. 7.9.31. — Still profuse mucoid discharge; slight tip tenderness; Schwartze operation recommended. 15.9.31.—

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

Operation, dense mastoid; practically no cells; no pus found in antrum: cavity drained with rubber dam and upper part of wound stitched. 18.9.31.—1st dressing, stitches removed.

22.9.31.—Submucous resection (septum markedly deviated to left).

21.10.31.—Pain and swelling in region of former operation; patient admitted; temperature 99.8°, pulse 104, respiration 22.

22.10.31.—Old incision opened; abscess in superficial tissues (*Streptococcus hæmolyticus*); radical operation completed; Eustachian tube very wide—curetted; malleus removed; incus not found; packed with iodoform worsted; wound stitched.

25.10.31. — Pain last night—slept after aspirin. Quite well at 9.30 A.M.; during morning patient became giddy; vomited at 12.30 P.M. *Examination*—Spontaneous rotatory nystagmus of third degree to right (healthy) side; totally deaf, with noise box in healthy ear; feels room going round; no fever, no neck rigidity, no Kernig's sign, no dysdiadokokinesia.

Operation, 9 P.M.—Stapes found loose and came away. Prominence of lateral canal chipped off, also promontory (double vestibulotomy); cavity packed with iodoform worsted.

Lumbar puncture: fluid clear but under increased pressure; C.S.F., no growth on culture. Lymphocytes and polymorphs seen in films; cell count, 110 per c.m.; globulin, no increase. W.R. negative; colloid gold reaction, 0121000000.

During the next few days it was noted that there was rotatory nystagmus to the right on looking to the right and to the left, but it was absent on looking straight forward.

29.10.31. — Posterior wound stitched. 30.10.31. — Giddiness greatly diminished; nystagmus still third degree. 31.10.31.—First degree nystagmus to-day. 2.11.31. — Stitches removed; progress satisfactory.

Dr. HARPER: "Might I ask if Dr. Gardiner carried out the caloric test on this case or if he came to his diagnosis of latent labyrinth suppuration on the absence of the fistula symptom and the presence of deafness in the left ear?

"Might I also ask Dr. Gardiner why he carried out repeated lumbar puncture as part of the treatment? This is a case with meningeal symptoms. The cerebro-spinal fluid was found to be a little cloudy but not under pressure. No growth was found on culture. I should say to carry out repeated lumbar puncture in a case of serous meningitis is rather a dangerous procedure."

The VICE-PRESIDENT: "The absence of the fistula test is no evidence that you have a dead labyrinth."

CASE 6. **Case for Diagnosis**—W. T. GARDINER.—J. R., female, aged 69. First seen 4.10.28. History of hoarseness for a year.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

On examination of the larynx the cords showed a rather red, mammillated appearance with a distinct soft-looking red fibroma on the left vocal cord about its centre. Patient seen at intervals since then. Cords appear to be becoming thicker and redder and to be almost masses of granulation tissue. Various treatments were tried without avail.

Suggestions as to further treatment were invited.

Dr. HARPER: "I consider this is a case of papilloma of the larynx. I would like to suggest to Dr. Gardiner that he should try removal by the direct method, and put the patient on small doses of arsenic for a period of several weeks."

CASE 7. **Case for Diagnosis**—W. T. GARDINER.—Mr. C., aged 72. Seen 20.10.31. Has lately been hoarse and occasionally lost his voice. Old history of tuberculosis here, according to his doctor, and patient has not done any work for the last twenty years. He is a short, stout, little man, a little breathless and definitely hoarse.

Examination of the oropharynx: nothing of note. Examination of the larynx is a little difficult at first as the epiglottis is dependent and the patient has a thick neck. On phonation, however, one sees that the left cord does not move at all; there is a suspicion of an ulcer in the pyriform sinus, and externally on the left side there is an enlarged gland which is movable but is fairly firm to the touch. I suggest that this patient possibly has a malignant ulcer in the left pyriform sinus, and this may account for the pain which he occasionally has in his ear, and that it would be advisable to confirm this by means of direct examination and an X-ray of the chest to exclude aneurism.

X-rays are shown: A mass can be seen involving the manubrium, and a very beautiful picture of distortion of the trachea can be seen. In consultation with Mr. J. M. Graham it was decided that no operative interference should be undertaken.

CASE 8. **Malignant Disease of the Right Ary-epiglottic Fold and Pyriform Sinus treated by implantation of Radon Seeds**—W. T. GARDINER and DONALD WATSON.—Mr. C., aged 63. First seen 31.3.31 complaining of pain and discomfort in his mouth and some discomfort on swallowing on the right side. Seems to date this back to removal of some teeth on the left side some years ago. Thinks that the jaw has never healed up and that it is "festering."

On examination patient is edentulous. Nothing can be seen in the mouth. The tongue is protruded quite well. Laryngeal examination shows an ulcer in the region of the ary-epiglottic fold and pyriform sinus on the right side. I considered that this was probably malignant. There was no glandular involvement. In consultation with Mr. Donald Watson I decided that the condition might best be treated by the implantation of radon seeds. This was carried out on 18.4.31.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

Under general anæsthesia and under direct vision radon seeds were inserted. Patient had remarkably little discomfort. 1.5.31.—Radon seeds removed. 6.5.31. — The ulcer is looking smaller and he certainly has a considerable degree of comfort. 9.10.31.—There is no sign of the ulcer beyond a whitish-scar appearance.

The VICE-PRESIDENT asked why Dr. Gardiner had gone to the trouble of removing the seeds. He understood that the advantage of radon was that the seeds were allowed to remain and come out if they liked; that being so, why go to the trouble of removing them? They would have exhausted their activity.

Dr. GARDINER said the seeds were removed because the patient was aware that metal containers were being implanted in his pharynx and if these had been left the psychic effect on him would have been bad. A colleague had suggested the use of radon seeds to him in this case and, as the procedure seemed simple, he had used them. Locally the result had been very satisfactory.

Dr. R. P. MATHERS: "I should like to ask if there is any advantage in supplementing internal treatment with radium by using a collar with radium on the outside. I have had a case recently of a pharyngeal growth, which I have proved by microscopic examination to be epithelioma, and in which I tried to implant radium needles but without success. I put on a collar of radium with a big dose, giving him about 20,000 mgrm.-hours. After leaving it on a certain number of days, reaction was pretty marked, with œdema in the pharynx, but he recovered from that and the skin showed signs of a burn ten days afterwards. The strange thing is that the growth has disappeared. I cannot really reconcile its disappearance with that external application of radium. I should like to know if anyone has had a similar experience."

Dr. W. S. SYME: "There have been quite a number of cases in the Western Infirmary in Glasgow, where we have been applying radium from the outside. We used collars of the same nature with Columbia paste and for between 20,000 and 30,000 mgrm.-hours, very often without any attempt at radium inside. Lately we have been trying applications from the outside, not with Columbia paste, but with collars made from Sorbo rubber. This is a much more comfortable method of application than the rigid Columbia paste collar. The results in these external applications have been really remarkable in a great many cases. I think that at any rate in the Radium Institute in Glasgow, they favour this method as opposed to the application by the interstitial method."

The VICE-PRESIDENT: "I have only had one experience of the application of radium needles by the interstitial method. It seemed to stimulate the growth and we got a nasty discharging sinus leading into the wound in the neck."

Dr. GARDINER experienced no difficulty in removing the seeds. They were attached to stout linen thread which held on tension. In future he would use radium needles in a similar case and this might prevent what had occurred in this case—a secondary deposit in the cervical glands.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

Dr. J. P. STEWART: "I should like to ask if any member has had any experience of Billington's 'antimalignyn serum' which is yet in its experimental stage. The research work done on cancer shows that there is a calcio-nucleo-protein deficiency in the blood and it is claimed for this serum that it replaces this deficiency and therefore has a beneficial or even curative action on some cases of malignant disease. Some very successful cases have been reported upon."

CASE 9. **Traumatic Stricture of Œsophagus: Five Years later, Cancer of Hypopharynx: Extrinsic Cancer of Larynx.** —J. P. STEWART.—Mrs. S., aged 30, admitted to Ward 3, 1.7.26, suffering from ammonia poisoning. Examined 7.7.26: mucosa of hypopharynx and larynx congested, with superficial erosions. 27.9.26. —Mucosa of mouth, fauces, pharynx and larynx normal. Screen examination showed almost complete obstruction of the œsophagus at the level of 6th dorsal vertebra. 28.9.26.—Œsophagoscopy: cicatricial constriction of œsophagus below level of aortic arch; small central opening with radiating scars around; graduated bougies passed. Patient asked to report on several occasions but did not do so until 3.5.31, nearly five years later, when she was sent in by her doctor complaining of difficulty in breathing. Laryngoscopy showed an ulcerated swelling of the ary-epiglottic folds and enlarged cervical glands on the right side of neck. Immediate tracheotomy performed.

7.5.31.—Direct examination of hypopharynx showed ulceration of right lateral wall. Microscopic report: squamous epithelioma. 7.9.31. —Glandular swelling in neck has increased; ulceration at base of tongue on right side involving right tonsil and anterior pillar. Patient unable to swallow: sent to surgical department with a view to gastrostomy (Professor Wilkie).

Dr. J. P. STEWART: "Professor Wilkie operated upon this case when he performed a gastrostomy. The patient has since died and permission for a post-mortem examination was refused. It is interesting to note that the carcinoma developed in the œsophagus when the patient had first of all suffered from a traumatic stricture."

The VICE-PRESIDENT: "This week I had a reprint of a paper by Professor Chevalier Jackson on the treatment of malignant disease of the œsophagus in which he suggests that efficient care of all simple ulcers and fissures as a prophylactic measure is the only treatment of cancer of the œsophagus likely to bring success in the present state of our knowledge of the disease."

CASE 10. **Case for Diagnosis**—J. P. STEWART.—C. T., female, aged 60. Complained of giddiness and staggering for a fortnight prior to examination, also discharge from the right ear for a period of years.

1.10.31—*Examination.*—The right drum-head was absent and granulations could be seen at the inner end of the external meatus.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

The left drum-head was normal. With noise box going in left ear, patient had absolute deafness. There was no spontaneous nystagmus. Cold caloric reaction was normal. A little unsteadiness on Romberg's test. Finger-nose test fairly good. Past-pointing to the left side. No dysdiadokokinesia. No facial weakness and no anæsthesia of skin or mucous membranes. No definite pathological lesion in optic discs. The reflexes on the left (sound) side of the body are generally sluggish. Wassermann reaction was negative. X-ray poor.

6.10.31.—Radical mastoid operation. Pus and granulations in antrum. Labyrinthine capsule healthy. Dura mater of posterior and middle fossae normal. Wound left open.

14.10.31.—Patient has not complained of further giddiness. Körner flap cut and wound sutured. 21.10.31.—Slight facial weakness on right side, which has just appeared.

Diagnosis.—Probable tumour of the eighth nerve on the right side, complicated by a chronic purulent otitis media.

Case 12. **Osteoma of the Frontal Sinus**—J. D. Lithgow.—Mrs. A. R., aged 52. Headaches, one year; recently very acute. W.R. +++. X-Ray: Osteoma of frontal sinus. No abnormal secretion in nose. Right radical frontal operation: osteoma removed. (Specimen kindly lent by Dr. Logan Turner.)

Case 13. **Branchial Cyst complicating Mastoiditis**—I. Simson Hall.—N. B., aged 15. First seen in this department 1930.

1925.—Right mastoid operation.

1927.—Abscess opened behind right ear.

29.11.30.—Swelling behind right ear with redness and tenderness. Swelling opened—pus evacuated. Had swelling over the mastoid process which reacted to fomentations (two to three applications).

3.1.31.—Exploratory operation. Mastoid region opened on right side. Chronic suppuration with cholesteatoma found in middle ear. Lower end of wound, cystic swelling which was opened. This was found to pass downwards behind sternomastoid into the neck, ending in fibrous cord.

Gland incision made in neck and mass dissected out from the neck. Neck wound closed. Mastoid operation completed. No recurrence of swelling.

Pathologist's Report.—Large cyst-like cavities lined with squamous epithelium. Appearances are those of branchial remnants.

Case 16. **Epithelioma of the Right Cord (Laryngo-fissure)**—G. Ewart Martin.—W. A., aged 56. First seen 11.5.29. History of hoarseness for seven months. Epithelioma involving the anterior

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

third of the right cord passing on to the left. Laryngo-fissure operation, 5.8.29, removal of the anterior end of the left cord and complete removal of the right.

CASE 17. **Cancer of Alveolus and Antrum and Nasal Floor**—G. EWART MARTIN and I. SIMSON HALL.—A. L., aged 65. First seen 16.2.31. Cancer involves alveolus, floor of nose, hard palate and antrum. There is a sinus from the alveolus into the nose.

25.2.31—*Operation.* — Soft parts divided with diathermy knife. Upper jaw divided in mid-line, and upper jaw removed on the right side, about half an inch clear of growth. Hard palate divided, and antral wall and bone, including growth, removed in one piece; part of septum removed and lateral nasal wall and medial part of floor of nose. Radium packed round cavity. Cavity packed with gauze and kept in position with Stent obturator. Still shows slight necrosis of hard palate—cavity otherwise healthy.

Dr. HARPER asked Dr. Martin with reference to Case 17, if he formed any idea as to where the cancer originated. Did he think it originated in the alveolus or came from the ethmoid as most of these cases do?

Dr. MARTIN was of the opinion that the growth had originated in the alveolus.

CASE 20. **Fracture of Base involving Right Temporal Bone: A.S.O.M. (Right): Schwartze Operation: Meningitis: Abscess of Right Temporal Lobe: Recovery**—J. S. FRASER.—R. P., male, aged 20, motor driver. Seen 6.6.31. History of motor bicycle accident 23.5.31: unconscious for thirty hours afterwards; admitted to Mr. W. J. Stuart's wards. Bleeding from right side of nose and from right ear; frontal headache; vomiting; some neck rigidity. Later X-rays showed fracture of right parietal and temporal bones, extending down to middle fossa. Purulent discharge from right ear began 2.6.31.

Examination (J. S. F.).—Temperature 99.6°, pulse 60; no limitation of fields of vision; no vomiting; no sensory aphasia; patient not quite deaf, with noise-box in good ear; no facial paralysis; no spontaneous nystagmus; pupils equal and react.

Immediate Schwartze Operation.—Mastoid dense; pus in antrum; incision extended upwards, exposing fracture of squamous bone; dura exposed; no extra-dural abscess; wound lightly packed and left open. Lumbar puncture evacuated cloudy fluid under tension (w.b.c., 800 per c.m.; polymorphs, 25 per cent.; large mononuclears, 60 per cent.; no organisms present).

8.6.31.—Fairly good night; no vomiting; still severe headache; neck stiff; evening temperature 102° F. 9.6.31. — Patient better; temperature 98° F.; cerebro-spinal fluid clear and under normal

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

tension. 11.6.31.—Epileptiform attacks; vomiting; weakness of left side of face, left arm and leg; abdominal reflexes absent on left side; extensor response on Babinski's test; ocular fundus normal.

13.6.31.—Headache, drowsiness, vomiting; pupils unequal. *Second Operation.*—Right temporal lobe investigated by Lemaitre's method; profuse gush of fluid resembling buttermilk, followed by pus and necrotic brain tissue (hæmolytic streptococcus); small drainage tube inserted.

15.6.31.—Patient much better; headache disappeared and also the paresis of the left side; right pupil slightly smaller than left. Convalescence uninterrupted, but a voracious appetite was a notable feature. 14.7.31.—Patient went to Astley Ainslie Institution. 4.9.31.—Report on patient: condition satisfactory; whisper heard by right ear at four feet.

Temporal Lobe Abscess (nineteen cases).—Operated on at R.I.E. from 1907 to 1931. Recoveries: eight (42 per cent.); deaths, 11 (58 per cent.).

Temporal lobe abscess occurred in two cases of acute middle-ear suppuration and mastoiditis. Both patients recovered. One of them suffered from fracture of the skull and meningitis.

In the 17 cases of temporal lobe abscess occurring in chronic middle-ear suppuration and mastoiditis, 6 recovered (35 per cent.) and 11 died (65 per cent.). One of the six patients who recovered suffered from meningitis. Of the 11 patients who died, meningitis was present in eight, labyrinthitis in one, and rupture into the lateral ventricle occurred in two.

CASE 20A. **C.O.M.S. (left): Radical Mastoid Operation: Temporal Lobe Abscess: Recovery.**—M. G., female, aged 11. Seen 20.3.31. History of influenza and acute exacerbation of chronic middle-ear suppuration (left) three weeks ago. One week ago discharge stopped, pulse and temperature became subnormal and patient was listless and complained of severe left temporal headache; vomiting.

Examination.—Temperature 97° F.; pulse 56; tongue furred; no facial paresis; no diminution of field of vision; pupils equal and reacting; grasps equal; no tenderness on tapping over temporal or cerebellar region; well-marked sensory aphasia; vomiting. Otoscopy shows posterior marginal perforation of left drum-head; scar in right drum-head.

Immediate radical mastoid operation; mastoid dense; pus in antrum; long process of incus absent; bony roof of tympanum absent and reddish granulations over area the size of a threepenny piece. Small incision made and Cushing pus-seeker inserted—odourless pus spurted out for six inches (hæmolytic streptococci); small

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

rubber drainage tube introduced by Lemaitre's method; wound left unstitched.

21.3.31.—Wound dressed; no pus on removal of tube. 23.3.31. Again no pus; patient quite bright mentally; sensory aphasia has passed off. 2.4.31.—General anæsthesia: edges of wound behind ear under-cut and united. 24.4.31.—Wound healed; patient sent to Convalescent Home. 29.5.31.—Reports on patient: condition satisfactory.

CASE 21. **A.S.O.M. (left): Schwartze Operation: Sinus Thrombosis: Jugular Ligature**—J. S. FRASER.—M. B., female, 18 years. Seen 26.3.31. Discharge from left ear for two weeks, with pain and mastoid tenderness; no history of rigors; temperature on admission 102·8° F.; pulse 114. Examination showed mastoid tenderness and swelling.

Immediate Schwartze Operation.—Mastoid dense; pus in antrum (*Streptococcus hæmolyticus*); the sinus appeared normal on exposure.

30.3.31.—Temperature rising; tongue furred; no reaction in wound; no rigors, stiffness of neck, Kernig's sign or spontaneous nystagmus. 31.3.31.—Temperature 106° F.; patient drowsy and cyanosed. *Second Operation.*—Lateral sinus exposed and appeared normal; jugular vein normal, exposed and divided between ligatures. Cerebrospinal fluid normal; no growth on blood culture.

4.4.31.—Ligature removed from bulb end of internal jugular vein but free bleeding necessitated another ligation. 10.4.31.—Evening fever for last four days, 101° to 102° F. *Third Operation.*—Lateral sinus further exposed, slit up and found filled with clot (*Streptococcus hæmolyticus*); free bleeding obtained from torcular end, controlled by packing.

8.5.31.—Wounds healing rapidly; patient sent to Convalescent Home. 17.7.31.—Report on patient: no discharge from ear; whisper well heard; slight keloid scar in neck.

Sinus Thrombosis (fifty cases).—Operated on at R.I.E. from 1907 to 1931 inclusive. Recoveries, 30 (60 per cent.); deaths, 20 (40 per cent.).

Sinus thrombosis occurred in 22 cases of acute middle-ear suppuration and, of these, 15 (68 per cent.) recovered, and 7 (32 per cent.) died. There was no other intracranial complication present in the cases which recovered. Of the seven patients who died, three had meningitis, one cavernous sinus thrombosis, and one thrombosis of the jugular bulb and internal jugular vein, with metastases.

In the 28 chronic cases, 15 (53 per cent.) recovered, and 13 (47 per cent.) died. Of the patients who recovered, two suffered from meningitis, two from cerebellar abscess, three from labyrinthitis, and one from thrombosis of the jugular bulb and internal jugular vein. In

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

the 13 fatal cases, meningitis was present in five, labyrinthitis in four, cerebellar abscess in one, purulent encephalitis in one, while two showed thrombosis of the superior petrosal and cavernous sinus and one thrombosis of the superior longitudinal sinus.

CASE 21A. **A.S.O.M. (left): Schwartze Operation: Sinus Thrombosis: Operation on Lateral Sinus and Ligature of Jugular Vein**—Dr. J. S. FRASER.—MRS. M. G., female, aged 39. Seen 15.7.31. Pain in and discharge from left ear for four weeks. On admission temperature 103° F.; pulse 132; vomiting and giddiness present. Left tympanic membrane bulging, anterior perforation; air comes through on Valsalva's experiment; mastoid tenderness present. No neck rigidity, spontaneous nystagmus or Rombergism; patient not deaf, with noise box in good ear.

16.7.31. *Schwartze Operation* (*left*).—Mastoid dense; pus in antrum (*Streptococcus hæmolyticus*); sinus far forward, appeared fairly normal; wound packed and left open.

17.7.31 to 20.7.31.—Slight evening temperature, below 100° F.; patient rather drowsy; blood culture on 20th, showed no growth on the 23rd, but on the 24th there was a growth of hæmolytic streptococcus. 21.7.31.—Ocular fundi normal. 22.7.31.—Temperature 105° F.; no rigor but patient drowsy; anti-scarlatina serum given intravenously; leucocyte count showed 16,000 w.b.c. *Second Operation.*—Lateral sinus exposed and appeared healthy; gauze packing inserted between sinus and bony wall; sinus slit up, no obvious clotting but subsequent microscopic section of sinus wall showed organising thrombus (sinus wall yielded growth of streptococci); jugular vein divided between ligatures.

25.7.31.—Fever continues; anti-scarlatina serum again given. 27.7.31.—50 c.c. of 10 per cent. saline intravenously; swelling and tenderness of right knee. 30.7.31.—Patient better; bleeding from torcular end of sinus has stopped; ligature removed from bulb end of internal jugular vein, pus escaped; bulb washed through from sinus.

4.8.31.—Still evening fever but lower than before; 40 c.c. of greenish-yellow fluid aspirated from right knee (no organisms, no growth on culture). 15.8.31.—Patient transferred to surgical side and knee-joint opened by Professor John Fraser. 23.9.31.—Patient reports at E.N.T. Department; arthritis of knee completely healed; granulating area behind left ear; on Valsalva experiment air and mucus bubble into external meatus; whisper heard with finger closure of good ear.

CASE 22. **C.O.M.S. (left): Radical Mastoid Operation: Cerebellar Abscess: Recovery**—J. S. FRASER.—M. C., female, aged 7; seen 29.9.30. History of discharge from left ear on and off for more than six years. Otoscopy impossible.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

20.1.31.—Radical mastoid operation (left): mastoid dense; antrum showed only slightly congested mucosa, no pus; middle fossa dura healthy; sinus not exposed; practically no disease found; skin graft applied. 23.1.31.—First dressing; condition satisfactory. 3.2.31.—Sent to Convalescent Home, but only remained one week.

21.2.31.—Child sent in by her doctor with history of headache, vomiting, slow pulse, subnormal temperature and very slight drowsiness.

Examination.—No optic neuritis; nystagmus to left (same side). Well-marked dysdiadokokinesia; past-pointing to right with left arm; child complained of giddiness and there was a tendency to fall; weakness of grasp of left hand; complete deafness in left ear.

Immediate Operation.—Incision made downwards and backwards from old mastoid incision; bone removed from posterior fossa behind and below sinus; dura exposed, normal; small incision made and Cushing pus-seeker introduced; yellow, creamy pus escaped (staphylococcus); small drainage tube inserted.

23.2.31.—First dressing; slight escape of pus when drainage tube removed; ether applied to mastoid cavity caused conjugate deviation to opposite side. Cavity syringed with warm lotion which caused conjugate deviation to same side: labyrinth therefore functioning.

28.2.31.—Patient not well; vomiting; drowsiness; pulse rapid; no fever. 6.3.31.—Small hernia of cerebellum; vomiting; dysdiadokokinesia present.

8.3.31—Third Operation.—Mastoid wound opened up; granulations removed from posterior wall of cavity; sinus exposed and appeared normal; bone from triangular area removed and cerebellum explored internal to sinus; no pus. Further incision in dura of posterior fossa; some pus evacuated from cerebellum.

24.3.31.—Hernia cerebelli larger; on lumbar puncture fluid clear and under normal tension (only four cells per c.m.). 31.3.31.—Patient better; hernia cerebelli dressed with gauze soaked in 10 per cent. formol. 26.4.31.—Part of hernia came away; general condition better; still weakness of left side; patient deviates to left on walking. 19.6.31.—Child sent to Astley Ainslie Institution. 31.7.31.—Hernia cerebelli has disappeared; opening in dura covered by epithelium; no dysdiadokokinesia; no spontaneous nystagmus; no Rombergism.

Cerebellar Abscess (twelve cases).—Operated on at R.I.E. from 1907 to 1931. Recoveries: five (42 per cent.); death, seven (58 per cent.).

In all 12 patients suffering from cerebellar abscess, the middle-ear suppuration was chronic. Of the five who recovered, two suffered from sinus thrombosis and two from meningitis. In the fatal cases sinus thrombosis was present in one, meningitis in two, labyrinthitis in three and tuberculous otitis media and interna in one.

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

Societies' Proceedings

SUMMARY.

During the years 1907 up to the present time, 320 cases of acute middle-ear suppuration and 1240 cases of chronic middle-ear suppuration have been operated upon by the writer at the Royal Infirmary, Edinburgh. During this period 50 cases of blood infection, 19 of temporal lobe abscess and 12 of cerebellar abscess have been dealt with. Of these 81 cases, 43, or 53 per cent. recovered, and 38, or 47 per cent., died. Cases of purulent meningitis alone are omitted.

Cases Nos. 20, 21, 22. Dr. MARTIN: "Dr. Fraser suggested that we might give our statistics of cases of intracranial complication following otitis media for comparison.

"During the period from 1927 up to the present, in Dr. Lithgow's Clinic we have had 11 cases of blood infection; 12 cases of temporal lobe abscess; and 5 cases of cerebellar abscess following both acute and chronic otitis media, making a total of 28 cases of intracranial complication apart from meningitis which is not included in this synopsis.

"In the 12 cases of temporal lobe abscess we have had:—

5 cases following acute otitis media.
7 cases following chronic otitis media.
2 recoveries after cases of acute otitis media.
5 recoveries after cases of chronic otitis media.
3 deaths after cases of acute otitis media.
2 deaths after cases of chronic otitis media.

In the 5 cases of cerebellar abscess we have had:—

1 case following acute otitis media.
4 cases following chronic otitis media.
1 recovery after the case of acute otitis media.
4 deaths after the cases of chronic otitis media.

In the 11 cases of sinus thrombosis we have had:—

3 cases following acute otitis media.
8 cases following chronic otitis media.
2 recoveries after cases of acute otitis media.
2 recoveries after cases of chronic otitis media.
1 death after a case of acute otitis media.
6 deaths after cases of chronic otitis media.

Of these 28 cases we have had 12 recoveries, a percentage of 42 per cent, and 16 deaths.

"During this period we have operated on 343 cases of acute otitis media, and 165 cases of chronic otitis media. It is interesting to note that during the same period in the Out-Patient Department we have had 858 new cases of acute otitis media of which 201 required a paracentesis and 343 required a Schwartze operation. Of the 631 new cases of chronic otitis media, 165 required operation.

It looks as if the intracranial percentage remained about the same in the two departments."

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

The VICE-PRESIDENT: "I think both departments are to be congratulated on the high percentage of recoveries. In 1927 in Vienna, Professor Duthen did not give nearly such a high percentage of recoveries in his cases. I remember he quoted Okada as giving 40 per cent. recoveries in the whole literature of brain abscess."

EXHIBITS.

J. D. LITHGOW (1 and 2).

1. *Demonstration of X-rays* of three cases of dental cyst. Specimens shown in two cases.

Mrs. J. H. Mr. M. Mr. S.

2. *Demonstration of X-rays* in two cases of massive collapse of lung following tonsillectomy:—

C. G., aged 10.—Massive collapse of lung showing recovery in six weeks. No bronchoscopic treatment.

J. H.—Massive collapse of lung followed by chronic suppuration of lung. Death in four months. Lung previously damaged by two attacks of pneumonia.

DOUGLAS GUTHRIE (3).

3. *Water Colour Drawing of a Nasal Polypus, extruded from the Nostril during the act of Sneezing.*

Miss W., aged 34, who had not complained of nasal obstruction or other nasal symptoms, was one evening seized by a violent attack of sneezing, and was then greatly alarmed on seeing a tumour projecting from the nostril. It was easily removed by the snare (two years ago) and there has been no recurrence.

Demonstration of X-rays—*Lung Collapse.*

Dr. LOGAN TURNER wished to know the experience of members with regard to the frequency of this complication. He could not recall any case of the kind seen by himself. What was the nature of the operation performed? Were the tonsils guillotined or dissected out? Was local anæsthesia or was general anæsthesia employed?

Dr. HALL: "The X-rays are shown for the particular purpose of gaining information as to whether this particular complication has occurred elsewhere. Both these cases were guillotined under ethyl chloride. I have reason to believe the operations were performed by a competent operator and at no time was the operation unduly prolonged. In the procedure adopted at the hospital where they were performed, the patients are turned over on the right side to recover. In both series of X-ray cases the lung affected is the left one. One would have expected from experience of foreign bodies and the inhalation of secretion, that the right lung would

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press

have been the one affected. A determining factor in both cases was previous pneumonia. In one case two attacks of pneumonia had previously been experienced by the patient. The same held good in the other case in which the mother gave a history of chronic bronchitis and general chest trouble right up from infancy."

Dr. HARPER asked if these were isolated cases or common occurrences.

Dr. HALL: "From what one has seen one is forced to conclude that they are a great deal more common than is generally believed. Massive collapse of the lung has been found in this hospital during the last two to three years and cases can be picked up in general surgical wards at any time by any surgeon who is on the lookout for them. One does not mean to suggest that such severe cases as those demonstrated to-day are common. These cases are exceptionally severe, but I believe that in a good many cases in which the chest is affected, there is some degree of collapse. Medical literature is full of reference to this particular complication, and one would also like to know just what experience other surgeons have had."

Dr. HARPER: "Dr Hall's remarks make me rather frightened. He tells us that collapse of the lung is very common in the surgical wards here. Personally I have never met it in my own practice or experience, but I must say that after this, if I found a child with a little cough after operation, I would be very alarmed in case it were going on to collapse of the lung. If it is as common as Dr. Hall would have us believe, then surely we would have met it. While slight cases may be common, and we may have missed them, the type of case which Dr. Hall has shown to-day, would be almost bound to occur in our own practice, either in hospital or private. So far I have not seen it. I hope I never shall."

Dr. SOUPER: "Is it suggested by Dr. Hall that when cases occur they are more frequent in tonsil cases than in any general surgical cases?"

Dr. HALL: "That is the point upon which I wanted advice."

Dr. SOUPER: "I have fortunately not had the experience of having this occur as far as I know after my tonsillectomy cases, either in hospital or in private practice, but one has certainly heard of them from anæsthetists and surgeons more frequently in the past two years. I do not think that collapse of the lung depends altogether on the type of operation. It may occur after any operation in any area of the body, and one of the worst cases of collapse of the lung in the experience of Dr. Ross Mackenzie was after a local anæsthetic. He explained that by the fact that the patient was a man who was extremely neurotic and scared about his operation. He was subject to bronchitis, and operation for inguinal hernia was performed under local anæsthesia, and after operation he was too afraid to breathe freely or to move. He continued in this condition for about forty-eight hours with the result that he hardly aerated his lungs and had collapse of the lung. That was not post-anæsthetic but post-operative."

https://doi.org/10.1017/S0022215100037348 Published online by Cambridge University Press