SOCIETIES' PROCEEDINGS

AUSTRIAN OTOLOGICAL SOCIETY.

Proceedings of Meeting of April 27, 1931.

(*From the Monatsschrift für Ohrenheilkunde*, July 1931.)

Abstract of Proceedings by A. R. TWEEDIE, F.R.C.S.

Otitic Meningitis. Recovery — E. RUTTIN. — A girl, aged 4 years, who five weeks previously had been operated upon for an acute left mastoiditis, was first seen by the Exhibitor on 2nd March with the history that two days ago there had been a sudden attack of vertigo with headache and symptoms of meningitis. The lumbar fluid was found to be turbid. *On examination* the post-aural wound was granulating healthily. The meatus contained some purulent secretion. She was found to be totally deaf; a Weber "Referred to the right"; spontaneous nystagmus to the right; no response to the caloric test; by-pointing inwards with the left arm, whilst the pointing with the right arm remained accurate. In addition there was a slight neck stiffness and positive Kernig, the other reflexes being normal.

Further operation was immediately undertaken as follows:— removal of the granulations in the post-aural wound revealed a well-exposed antrum and the sinus lying bare for a distance of about 1 cm. and covered with granulations. After completion of the typical radical operation the labyrinth was opened by Neumann's method, and the horizontal semicircular canal was found to be without any fluid content. A softened area of bone, posterior to the labyrinth, was then removed, thus exposing a retro-labyrinth cell filled with granulations and pus and communicating with the labyrinth itself. This cell contained about half a teaspoonful of pus under pressure. The dura of the posterior fossa, which was also exposed, appeared to be normal but, on further removal of the labyrinth towards the apex of the petrous bone, the dura of the middle cranial fossa was also found to be injected. The wound was left open and was dressed with a wick of gauze.

Examination of the cerebrospinal fluid taken before the operation showed immense numbers of leucocytes and lymphocytes—too many to be counted—but no bacteria, the pus from the labyrinth abscess yielding streptococci on culture.

The following day, *3rd March*, the child's condition was much improved, but a further lumbar puncture was made which revealed a slight increase of pressure; the fluid, though turbid, was clearer than

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the day before. Only 7 c.c. were withdrawn and 5 c.c. of N.S.S. with ·006 Solganal was introduced. The further report on this specimen showed neurophils 86 per cent., lymphocytes 14 per cent., and 1300 cells to the cubic millimetre. Culture—sterile. Albumin ·15 per thousand.

5*th March.*—Cerebrospinal fluid under far less pressure, clear and only 260 cells to the cubic millimetre. Some 8 c.c. were removed and 4 c.c. with ·006 Solganal was injected. The further examination of this specimen showed polymorphonuclears 65 per cent., lymphocytes 27 per cent., other cells 8 per cent. Albumin ·33 per thousand. No bacteria were discovered and the fluid was sterile on culture.

7*th March.*—Lumbar puncture. C.S.F. clear, some 10 c.c. were removed and ·006 Solganal introduced. The dressing of the ear was changed. Further report on specimen of C.S.F.: 52 cells to the cubic millimetre, polymorphonuclears 58 per cent., lymphocytes 32 per cent., remaining cells 10 per cent. Albumin ·33 per thousand. Culture sterile.

9*th March.*—With a normal convalescence lumbar puncture showed fluid under normal pressure—6 c.c. being removed and 4 c.c. of N.S.S. with ·006 Solganal being injected. A further report on the specimen showed 49 cells to the cubic millimetre, polymorphonuclears 49 per cent., lymphocytes 44 per cent., remaining cells 7 per cent. Albumin ·17 per thousand.

11*th March.*—Convalescence still uninterrupted although rotary nystagmus to the right was still present. Dressing changed. Fluid pus still present behind the labyrinth. Further report on C.S.F. taken on 5th March stated that, after long incubation, non-hæmolytic streptococci had been cultivated.

Thenceforward the convalescence was uneventful. No further lumbar punctures were performed and the girl was now shown completely healed, except for a slight muco-purulent secretion in the meatus.

In commenting on this case Ruttin considered that the patient's recovery could rightly be attributed to the immediate labyrinth operation and complete evacuation of all the neighbouring suppurating areas, to repeated lumbar puncture, and possibly, also, to the action of the Solganal. Although the prognosis of meningitis was still always extremely grave, he considered that, latterly, energetic treatment on these lines had produced an improvement in the outlook. At the same time, he freely admitted that the results were largely dependent on the character and virulence of the infection which in the case he had shown were not severe, since streptococci could be cultivated only after prolonged incubation. Nevertheless, he submitted that this form of treatment should be regarded as progressive.

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It was of further interest to note that the symptoms in this case were largely referable to meningitis, since, in conformity with a labyrinthine nystagmus directed to the right, there should have been by-pointing with both arms to the left, whereas, in this case, pointing with the right arm was accurate and pointing with the left arm was towards the right, that is in the same direction as the quick component of the nystagmus. Furthermore, this characteristic of the by-pointing remained constant for a long time. The persistence, too, of the spontaneous nystagmus was referable, in his opinion, to a meningeal source, as were also the increased responses to the reflexes, which were at first present on the contra-lateral and later on the homo-lateral side. The improvement in the meningitis was evidenced by the decrease of the cell count in the content of the C.S.F., in the proportion of the various cells and, lastly, in the decrease of the albumin.

In this case, when the number of cells in the cubic millimetre had fallen to 49, he had made no further lumbar punctures or introduction of Solganal and, according to his experience of other cases, therapeutic measures were no longer necessary when the cell count had fallen to such a figure, although this remark applied only to a decreasing cell count, as naturally such a cell count at the commencement of a meningitis would be alarming.

In the discussion which followed, Neumann remarked that it was most gratifying to find increasing numbers of reported recoveries from meningitis during the last years; but he drew attention to the fact that these had occurred chiefly among children, at least this had been his own experience, although he had also known some recoveries in adults. The cause for recovery was, in his opinion, some biological factor.

In reply, Ruttin agreed that he also had had similar experiences and he too considered that age was less a factor than some at present unknown biological factor.

Acute Bilateral Suppurative Otitis Media, following Scarlet Fever. Septicæmia. Suppurative Phlebitis. Metastases. Operation and Recovery—R. LEIDLER.—A child, 5 years of age, was admitted to hospital on 29th December with the following history:—Scarlet fever 1st November 1930. Three weeks bilateral otitis media, treated by the specialist in the Infectious Diseases Hospital by paracentesis on each side, after which drainage occurred. The temperature remained high and was associated with nephritis and parotitis. Three weeks ago bilateral antrotomy was performed, but the temperature remained high and was septic in character.

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On admission the child was extremely pale and emaciated and was complaining of right-sided headache.

Examination—Right ear: open antrotomy wound occupied by pale granulations and offensive pus. Meatus much swollen, tympanic membrane not visible, hearing still present. Caloric reaction positive. Left ear: similar condition but wound cleaner. Temperature 36·5. Pulse 110-145. No palpable glands, no tenderness over the jugular area. Otherwise nothing abnormal detected.

Operation—Right ear: wound re-exposed. Sinus found lying free covered with granulations and pus. Cells in the neighbourhood of the bulb in a state of active inflammation. Bone necrotic. The sinus was, therefore, freely exposed both upwards and downwards and its walls were found to be covered with turbid fibrinous exudate. Compression over the jugular vein revealed obvious filling of the sinus but, in spite of this, the sinus was incised and its wall found to be definitely thickened although normal bleeding took place.

Left ear: wound re-exposed. Infected cells especially in the neighbourhood of the apex, dealt with. The sinus was not exposed but overlying bone was removed in order to ascertain its condition, which was normal.

C.S.F. clear and under slight pressure; it revealed no micro-organisms and after two days remained sterile. No appreciable improvement in the condition of the child followed, and the temperature still showed a septic character but was not associated with rigors. There was frequent vomiting.

6th January 1931.—A further operation on the right ear was carried out in order to ascertain the condition of the sinus. It was found that the sinus walls were necrotic, that there was a purulent discharge from the sinus itself, and that the external jugular vein was much enlarged. This vein was investigated, therefore, and was found throughout its whole course, from the angle of the jaw to the clavicle, to be adherent to the sheath of the vessels and to contain almost pure pus. It was, therefore, extirpated as far as was possible without resection of the clavicle, although the thrombus contained therein reached into the innominate vein whilst, in addition, its tributaries were affected at their junction with the internal jugular vein and were ligatured on the healthy side of the thrombus contained therein. The upper end of the vein was left open and brought into the wound. The bulb and sinus were then exposed and the thrombus removed, free passage of lotion being obtained from below upwards. The thrombus was traced backwards to within 1 cm. behind the knee, when normal bleeding occurred. An extremely anxious convalescence followed, due to tachycardia, repeated rigors, and infection of both lungs and pleurae, the latter necessitating operative treatment for empyema—the pus

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from which revealed hæmolytic streptococci. This organism had also been found in the pus from the exposed sinus in the right ear. As a further complication, abscesses occurred on the right lower arm and left clavicle, and these also had to be evacuated.

After a further most difficult and protracted convalescence the child was eventually reported to be recovered at the end of April.

Acute Suppurative Otitis Media. Left. Stiff Neck. Thrombosis of the Jugular Vein. Recovery—R. LEIDLER.—A child, aged 7 years, was admitted to hospital on 27th December 1930 with the following history:—Pain in the left ear commenced, with fever, on 16th December followed by otorrhœa a week later, with rigors but without vomiting or giddiness. The day before admission it was noted that the head was held stiffly, which latter condition had indeed also been noted a year ago in connection with enlargement of the cervical glands.

On Examination — Left ear: tympanic membrane injected and infiltrated but no perforation visible, although there was a small amount of thick pus in the meatus. The posterior meatal wall was not affected and no alterations were to be seen or detected by palpation as regards the external ear, but the sterno-mastoid muscle was strongly contracted although not tender. Right ear, pharynx, and remainder of examination, including an X-ray picture of the cervical vertebrae—nothing abnormal detected.

The temperature, which on admission was sub-febrile, gradually rose with a septic character, but was not associated with rigors.

2nd January 1931.—Antrotomy. Bone hyperæmic, no apparent pathological content of the antrum, but the mastoid apex contained pus and granulations which lay in continuity with a peri-bulbar abscess. The operation terminated with free exposure of the sinus, the appearance of which was normal, except in the immediate vicinity of the abscess.

6th January 1931.—As the septic character of the fever progressed, further operation was undertaken for investigation of the jugular vein, the appearance of which was found to be normal, although it was surrounded by swollen lymphatic glands. The bulb and sinus were then opened and a thrombus some 4 cm. long was removed, after which normal bleeding occurred from below but not from above.

From then onwards the patient had a normal convalescence and was discharged on 7th February.

In commenting on these cases Leidler drew attention to the fact that in the preceding case, the thrombus in the vein must have extended further towards the heart than the site of ligature, whilst in the latter case a remnant of thrombus was definitely left in the posterior part of the sinus. In spite of this, both cases recovered, the first, indeed, after an anxious convalescence with many complications, and the second

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with a perfectly uneventful course. The stiffness of the neck in the second case must, he suggested, have been due to inflammatory involvement of the deep musculature of the neck, and not really to an affection of the sterno-mastoid muscle, which latter, on detailed examination, showed nothing abnormal.

Acute Suppurative Otitis Media, Left. Sinus Thrombosis. Ligature of the Jugular Vein. Operation and Recovery—E. GRABSCHEID.—A man, aged 29 years, who had undergone a trans-septal operation by O. Hirsch four years ago for the removal of a tumour of the hypophysis, was admitted to hospital on 15th February with the history that an acute otitis media on the left side had commenced on 23rd January, that the discharge had ceased on 9th February, whilst on 13th February, pain had recommenced behind the left ear associated with high fever and rigors.

Examination—Mental condition normal. Slight bilateral ex-ophthalmos. Coarse nystagmus of "pendulum" character in all directions. Other general examination, nothing abnormal detected.

Right ear: meatus occupied with wax. Tympanic membrane normal.

Left ear: membrane injected, details obscured. Pulsating secretion from antero-inferior quadrant. Post-aural œdema and tenderness.

Hearing—Whisper at 20 cm. Weber to the left. Rinné negative. Schwabach normal. C^4 much reduced. Caloric reaction retained.

Nose—Pus in the left inferior meatus. *Pharynx, nasopharynx and larynx*, nothing abnormal detected.

Operation—(*a*) Lumbar puncture. Fluid clear, pressure not raised. Albumin slightly increased. Six large cells and many erythrocytes in the cubic millimetre.

(*b*) Internal jugular vein, which appeared to be normal, ligatured.

(*c*) Antrotomy. Mastoid process occupied with granulations and sequestra, but free pus found only at the apex. The antrum itself was filled with granulations. The tegmen was extensively eroded and was removed, but the underlying dura appeared to be normal. The sinus, the walls of which were infiltrated, was then exposed, opened and a large thrombus was removed in part, thus permitting evacuation of pus from below and slight bleeding from above.

An anxious convalescence followed, characterised by a septic temperature. A blood transfusion was given on 28th February, after which the patient slowly recovered. The case was shown as an instance of recovery from an extremely severe infection.

Cylindrical Basal-Celled Carcinoma of the Outer Meatus. Excision. Application of Radium. Recovery—H. NEUMANN.—This case was originally shown at the Meeting in October 1930, with

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the history that during the last nine months the hearing in the right ear had become affected, but this was not associated either with tinnitus or with otorrhœa, although there was occasionally a right-sided headache. The meatus was then occupied by some form of neoplasm which obscured further examination. As the X-ray picture showed no evidence of an exostosis, an ecchondrosis was suspected, though the neoplasm did not appear entirely to account for a partial narrowing of the meatus.

The tumour had now been removed under a local anæsthetic, and the meatus now appeared to have cleared completely; the tympanic membrane was normal, the hearing had been restored to normal and the patient was rendered free from all pain.

The subsequent histological report was in accordance with the above title.

Neumann remarked that it had usually been his sad experience to meet only with an unfavourable course in these rare cases but, in spite of this, he had always hoped that, if such a condition could be diagnosed early, when as yet there were no signs of active extension, radical treatment combined with radium therapy might result in a lasting recovery. This particular case had been treated three times during November and December with 5 milligram hours of radium and the patient, as stated, was now completely free from all pain, whilst a further X-ray report did not suggest that any further treatment was necessary. Unfortunately, however, he had a patient in hospital at the present time with an inoperable tumour in this region, in whom the pain was so severe, and so completely unresponsive to all forms of sedative that she had to be isolated. Such a lamentable condition, he submitted, should urge all the members of the Society to deal with these cases in the earliest possible stages and by the most radical methods.

Note on an Early Complication of Acute Otitis—E. RUTTIN.—A man, aged 17 years, was admitted to hospital on 2nd April 1931. He had had no particular children's illnesses and, until twelve days ago, had been perfectly well, when a left-sided earache commenced with a temperature of 39·8 for which, eight days later, a paracentesis had been performed. Two days later a rigor had occurred accompanied by a temperature of 40·2.

Examination—Left ear: tympanic membrane injected and infiltrated. Details obscured. Large paracentesis opening in the posterior inferior quadrant with sanious purulent secretion. C.V. at 1 metre. Weber to the left. Rinné negative. Schwabach increased. C^1 and C^4 shortened. Mastoid process and neighbourhood of the internal jugular vein tender. Left tonsil injected and infiltrated with purulent exudate. Slight neck tenderness. Slight headache. Slight

https://doi.org/10.1017/S0022215100036732 Published online by Cambridge University Press

icterus. No symptoms of meningitis. C.S.F. clear. 25 cells (presumably to the cubic mm. A.R.T.). No organisms seen.

Right ear—normal.
Albuminuria.
Reflexes normal.

The general condition was very much worse on the following day as stiffness of the neck occurred with a positive Kernig. The other reflexes and sensibility were accentuated and an operation was, therefore, performed.

The mastoid process was found to be markedly pneumatic and the cells contained thick yellow pus, but there was no destruction of bone. After exenteration of the mastoid, the sinus was exposed and was found to be surrounded by pus under pressure. It was therefore laid bare along its whole length. Exploratory incision revealed only slight bleeding and, on further opening of the sinus, a dark red thrombus of recent origin was found. The internal jugular vein was therefore exposed in the neck and appeared to be swollen and surrounded by inflammatory glands, a healthy condition not being found until towards the lower third of the neck, where it was ligatured. After further ligature of the common facial vein the internal jugular was opened and was found to be occupied by a dark red thrombus of recent origin. The thrombus in the sinus was then removed, free bleeding being obtained from above. Death took place during the night.

In commenting on this case the exhibitor pointed out that the jugular vein was ligatured in a healthy portion; that the brain was subsequently found to be much injected and œdematous; that the ventricles had not increased in size; that the crypts of the tonsils were occupied with pus, especially on the left side; the liver was swollen, and from the spleen, which was enlarged to twice its normal size, streptococci were cultured. These organisms were also found in the meatal pus.

He also drew particular attention to the fulminating character of this infection and the rapid formation of a thrombus in the sinus, which he therefore suggested might well have been referable to a condition of the left tonsil rather than to the involvement of the mastoid, which latter both at the operation and on subsequent examination definitely indicated an entirely recent infection.

The operation, however, was undertaken as the patient's general condition was so grave; indeed, he had feared that the patient would quite likely die on the table.

The further post-mortem examination showed a pure sepsis without any trace of meningitis.

https://doi.org/10.1017/S0022215100036732 Published online by Cambridge University Press

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Acute Mastoiditis in a Case of Leukæmia—E. RUTTIN.—A woman, aged 43 years, under treatment for leukæmia, developed an acute otitis media on the left side following an attack of influenza in January 1931. Two days later Ruttin performed a paracentesis, since when a profuse otorrhœa had occurred, but there was no tenderness of the mastoid or infiltration of the posterior meatal wall, pain, headache, giddiness or fever, until 2nd March when pain in the ear and headache occurred.

Although the X-ray pictures did not afford any indication for interference, the fact that the tympanic membrane was injected and infiltrated so that all the details were obscured, that there was now infiltration of the posterior meatal wall, the mastoid process was œdematous and tender, and conversation reduced to half a metre, demanded operation which was carried out on 11th March, when profuse thick yellow pus was found at the first blow of the chisel together with granulations which had involved the whole mastoid cavity and had already exposed the lateral sinus.

A radical mastoidectomy involving exposure of the middle fossa, where the dura was already infected, was then completed. No unusual difficulties were found at the operation except that it was necessary to ligature even the smallest vessels in the soft parts on account of the excessive hæmorrhage. Even with this precaution the dressings were found to be saturated with blood a few hours after the operation.

On the following day the wound was redressed as the bleeding had obviously continued, but it was found that the bleeding was due only to vessels in the bone. The wound was therefore packed firmly with gauze over which the margins of the skin were stitched.

On 14th March the dressings were again changed and bleeding recurred. The wound was again packed firmly and restitched. Five days later granulations began to form and after this the patient made a normal recovery. Culture from the wound showed streptococci.

Ruttin drew attention to the fact that such severe bleeding in connection with mastoid operations was associated with one of three conditions—sepsis, hæmophilia, and blood diseases such as leukæmia, as was the case in the present instance.

Apparent Recovery of a Mastoiditis after almost Seven Weeks — E. RUTTIN. — A woman, aged 40 years, had right-sided earache on 10th December 1930, followed two days later by otorrhœa which still persisted. *On admission* to hospital on 28th January 1931 the condition was as follows:—Profuse otorrhœa. Marked infiltration of the postero-superior meatal wall, tenderness of the mastoid. C.V. at two metres. Whisper $\frac{3}{4}$ metre. Weber to the right. Rinné negative. Schwabach increased. C^1 shortened. C^4 normal. Left ear: normal.

The following day the meatus was "dry" and the meatal wall was

https://doi.org/10.1017/S0022215100036732 Published online by Cambridge University Press

no longer infiltrated, although the tympanic membrane was injected with scarcely any details visible. The operation, which had already been arranged, was postponed.

31*st January* 1931—Pain in the ear and head during the night. Temperature 37·2. Marked swelling of the posterior meatal wall, but no otorrhœa. Tympanic membrane still injected.

31*st January* 1931—Mastoid operation. Profuse yellow pus under pressure was found at the first blow of the chisel and the whole mastoid process was similarly involved. The sinus was exposed and its walls were covered with granulations. It was, therefore, further exposed both upwards and downwards until normal sinus wall was reached. In addition, on examining the antrum, the dura of the middle fossa over the tegmen was found to be exposed. Culture from the pus revealed staphylococci.

The patient made an uneventful recovery.

The case was shown to demonstrate an apparent recovery from the initial attack seven weeks before admission to hospital, and this afforded the exhibitor an opportunity of drawing attention to the fact that many observers, especially children's doctors, had stated that they could disregard swelling over the mastoid process and obtain good results without operation.

In Ruttin's opinion such cases usually, as in this instance, fell into other hands for operation, when it was found that the recovery was only apparent, and that in the meantime extensive inflammatory destruction of the mastoid process had been taking place.

ABSTRACTS

EAR.

The "Position in Space Analyser" in Deaf-mutes. A. G. FETTISON (Tomsk). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxvi., Heft 3, p. 351.)

A small wooden cabin suspended from the ceiling by a thick rope was used for the patient to sit in and was arranged to rotate by the untwisting of the previously twisted rope, four times in forty seconds. The rotation was at first slow but gradually quicker, then uniform and then rapid. The patient pressed the knob of an electric bell when he was conscious of rotation. The normal person felt ill after an average of 2·24 seconds from the start, deaf-mutes in whom there was still normal reaction to rotation and cold, only after an average of 10·85. Those in whom the reactions to rotation and cold were absent did not feel it at all. JAMES DUNDAS-GRANT.

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