that—or a Denker's—operation. In some of the cases of chronic rhinorrhœa in which the antrum could not be traced as a cause, a useful method was radiography with lipiodol; one had the patient in the erect posture, and as the antrum filled with lipiodol, the skiagram was taken immediately. Any irregularity in the mucosa would show in the picture.

AUSTRIAN OTOLOGICAL SOCIETY.

MEETING OF NOVEMBER 30, 1931.

Abstracted by A. R. TWEEDIE, F.R.C.S.

Bilateral Fistula Symptom in Congenital Lues—J. SOMMER. —A woman 30 years old, who for the past year had been under observation and treatment with corneal scars and Hutchinsonian teeth, was shown.

Examination.—Ears (*Right*)—Membrane normal except for slight scars in the postero-inferior quadrant. (*Left*)—Membrane indrawn. Whisper range 0·5 metre. Rinne, negative; bone conduction reduced; no spontaneous nystagmus; right and left.

On compression of the air in the right meatus, nystagmus directed to the left was induced, whilst by aspiration, nystagmus occurs to the right—the effect of aspiration being more marked than compression. Similar conditions were obtained on the left side, although the results were not so marked as on the right.

On rotation, no nystagmus was obtained in any position of the head, or in any direction, nor did the minimal caloric test produce any result.

With the galvanic test, kathode right, anode left, 2 m.amps. induced nystagmus to the right; and with kathode left, anode right, 1 m.amp. induced nystagmus to the left.

Wassermann reaction markedly positive.

The patient was treated with iodides, inflation and galvanisation, but during the treatment the hearing decreased to conversation at 0·5 metre. The labyrinth conditions which were examined many times whilst she was under observation, remained unaltered at the end of three months. The case also demonstrated the phenomenon to which Tamari had recently drawn attention:—viz., the production of vertical nystagmus on bilateral simultaneous compression.

Mucosus Otitis. Purulent Labyrinthitis. Extra-Dural Abscess. Meningitis. Operation and Recovery—E. RUTTIN.— A man of 54 was admitted to hospital on the 22nd September 1931,

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with a history that since the middle of July he had suffered from pain in the left ear for which paracentesis was made. Otorrhœa followed, which soon ceased, but tinnitus and heaviness in the head persisted, while the day before admission marked giddiness, vomiting and headache had occurred.

Examination.—The left tympanic membrane was injected, no details visible, slight secretion in the meatus, slight infiltration of the postero-meatal wall and tenderness over the mastoid process. There was no hearing either for speech or the tuning forks. Horizontal rotatory nystagmus of the third grade to the right, which at times also appeared to the left; varying spontaneous past-pointing; no fistula symptom; caloric reaction negative; and left facial paralysis. Head inclination to the left with tendency to fall in the same direction. Kernig positive. Vomiting. Reflexes exaggerated. Temperature 38·7. C.S.F. cloudy. Ocular fundi normal. Right ear normal.

Operation.—The mastoid process was sclerotic. There was pus under pressure in the antrum and this at once exuded in such quantities as to indicate extension of the abscess to the posterior cranial fossa and prevent the completion of the radical operation. An enlargement of the operation wound was therefore made posteriorly, disclosing a large extra-dural abscess. It was then possible to complete the radical operation, when the malleus and incus were found lying embedded in granulations. After removal of these and the pathological tympanic contents, the vestibule was opened from behind and the promontory removed (Neumann's operation). An obviously invaded portion of the roof of the antrum was also removed, exposing the middle cranial fossa.

23.9.31.—Temperature 39·5; pulse 96. Frontal headache, paresis of the facial nerve improved, cylotropin 5 c.c. injected intravenously.

24.9.31.—After a restless night the dressing was changed, and lumbar puncture repeated. Fluid was cloudy but contained no bacteria. Twenty c.c. were withdrawn and intrathecal lumbar injection of 10 c.c. cylotropin with ·01 gram solganol given.

25.9.31.—Culture from the pus of the mastoid wound revealed streptococcus mucosus.

26.9.31.—Temperature 36·2 to 40. Lumbar puncture was repeated and the fluid was cloudy. Solganol ·01 gram again injected.

27.9.31.—Cylotropin 5 c.c. injected intravenously.

28.9.31.—Report on C.S.F. of the 25th inst. showed the presence of no bacteria. 1970 cells to c.c. Fluid cloudy. On lumbar puncture repeated, pressure raised. Solganol ·01 gram injected.

29.9.31.—Temperature normal; pulse 96. Patient is now sleeping well but has slight frontal headache. Cylotropin 5 c.c. injected intravenously.

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1.10.31.—Cylotropin 5 c.c. injected intravenously.

2.10.31.—Intra-lumbar injection of solganol ·01 gram.

4.10.31.—Intra-lumbar injection of solganol ·01 gram. From then onwards the temperature remained normal. No complications ensued; the wound healed normally. The Wassermann reaction was negative, and no bacteria ever found in C.S.F.

17.10.31.—The facial paresis has almost recovered. No spontaneous nystagmus. No by-pointing, no tinnitus, giddiness or headache, but tendency towards the left on walking forwards blindfold, and to the right on walking backwards blindfold. Rotation to the right, head erect, nystagmus to the left, 4 seconds. Rotation to the left, head erect, nystagmus to the right, 15 seconds. Rotation to the right, face downwards, rotatory nystagmus to the left, 3 seconds, but no head retraction. Rotation to the left, face downwards, rotatory nystagmus to the right, 14 seconds, with typical giddiness and head retraction. Rotation to the right, head on the right shoulder, downward nystagmus, 7 seconds. Rotation to the right, head on the left shoulder, upward nystagmus, 7 seconds; in both of these last two tests giddiness and head retractions were observed.

The exhibitor considered this was another case of meningitis, following diffuse labyrinthitis with extra-dural abscess, which was cured as a result of the labyrinth operation, repeated lumbar puncture, and intra-lumbar injections of solganol.

Chronic Suppurative Otitis Media, Left. Diffuse Purulent Labyrinthitis. Meningitis. Radical Operation. Labyrinth Operation—E. SCHANDLER.—A woman of 29 had suffered in early youth from a left-sided aural lesion, with a varying degree of otorrhœa, but the hearing on this side remained persistently affected. Fourteen days before admission she complained of frontal headache, whilst for eight days giddiness had been so severe that she had been confined to bed for the last three days.

16.10.31.—*Examination on admission.* Temperature 37; pulse 88. The nose, pharynx and right ear were normal.

Left Ear—The meatus was full of offensive pus—attic cholesteatoma —necrotic polypi in antrum and attic. Conversation range nil. Rinne, negative. Weber to the right. No bone conduction. Spontaneous nystagmus of the 3rd grade to the right. No giddiness; fistula symptom positive; caloric reaction, negative.

18.10.31.—C.S.F. clear. Culture sterile. No excessive pressure.

Operation.—Sclerotic mastoid. Granulations in antrum; attic cholesteatoma; large fistula in the semicircular canal covered with granulations. Neumann's labyrinth operation performed, when granulations were found in the cochlea together with fluid pus.

After this the dura of the posterior and middle fossa was exposed.

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19.10.31.—The patient free from discomfort and no nystagmus. Temperature 36. Cylotropin injected intravenously.

21.10.31.—Frontal headache, frequent vomiting. Temperature 39·4; pulse 100. C.S.F. cloudy. Culture sterile.

Further Operation.—The internal meatus was exposed by removal of the posterior wall of the pyramid. In the region of the saccus the dura was covered with purulent granulations. Three more injections of cylotropin on the following three days. Local and general convalescence was normal.

1.12.31.—Patient discharged for treatment as an out-patient.

A Note on an unusual and complicated course of an Acute Otitis Media—H. NEUMANN.—A man aged 30 had the following history:—Formerly always extremely healthy. Three weeks ago he had suffered with right earache, and two days before admission to hospital, the temperature had varied between 39 and 40 degrees, accompanied by right-sided headache and rigors, but no vomiting or giddiness. For these symptoms he was referred to the exhibitor with the diagnosis of an endo-cranial lesion. On admission his temperature was 39·6; pulse 116. No meningeal or labyrinthine symptoms. No lesion of the cranial nerves, and the pupils responded promptly to light and accommodation. The right mastoid process was tender and the meatus much contracted, and contained fœtid pus. The membrane was not visible. Conversation range 5 cm. Typical middle-ear deafness. The caloric reaction was positive. Lumbar puncture was performed on two occasions; but the fluid contained so much blood as to be valueless for examination of cells.

Ocular Examination.—Old-standing advanced neuritis.

Operation.—Markedly pneumatic process, the cells of which were occupied with purulent granulations. The dura and sinus were found exposed and pus from the wound showed hæmolytic streptococci.

The following day, after a poor night, the temperature remained raised and the patient demonstrated a characteristic picture of sensory aphasia combined with clear consciousness. In the evening vomiting occurred, and whilst understanding for speech remained almost normal, he had great difficulty in finding his words. *Further operation* was therefore undertaken—the wound being re-examined and the temporo-sphenoidal lobe explored in three places, but with a negative result.

The symptoms were therefore regarded as being referable to a meningo-encephalitis.

The patient's general and sensory condition gradually became worse with a high temperature and delirium, and he died the following day.

In commenting on the case, Neumann remarked that two of the aids to diagnosis were not available since it was impossible to obtain an X-ray picture of the mastoid, and the lumbar fluid was unfortunately

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rendered worthless by the admixture of blood. He also stated that the lateral sinus in this case was wounded at the operation and that such occurrence must prejudice the course of events, although he could not give a definite opinion as to its exact causal relation to the fatal result. Unfortunately, operators did not usually publish their failures —as could well be understood—and were all more ready to show their triumphs. More knowledge on this latter point was certainly required.

Fistula Symptom after Labyrinth Operation. X-ray Therapy and Recovery — K. EISINGER. — A woman, aged 20, was admitted to hospital on the 24th September 1931 with the diagnosis of chronic suppurative otitis media (right), and the history that except for rheumatism she had previously been quite healthy, except that twelve years ago, after severe pain in the right ear, otorrhœa had followed, which had continued on and off up till a year ago.

Examination.—Left Ear—Chronic adhesive processes. *Right*—No post-aural œdema, but extreme tenderness over the antrum. Meatus dry. Membrane extremely indrawn and scarred. Other details obscure. Small perforation in postero-inferior quadrant with slight fœtid secretion.

Whisper at 20 cm. Rinne, *Right*—negative. *Left*—positive.

Weber not lateralised. Bone conduction increased. Symmetrical normal response to rotation both sides.

No fistula symptom.

27.9.31.—Transferred to surgical clinic for treatment of acute appendicitis.

1.10.31.—Re-transferred to exhibitor with still a right otorrhœa and, latterly, right-sided headache with giddiness. *Re-examination—Right Ear*—Meatus occupied with cholesteatomatous material—pulsation in the attic region. Hearing range diminished. As the symptoms and local conditions had not improved :—

9.10.31.—*Operation* on the right ear. Bone sclerotic; antrum enlarged and occupied with cholesteatoma and granulations. Ossicles not seen—enlarged peri-sinus abscess and extra-dural abscess.

23.10.31.—Discharged for out-patient treatment.

26.10.31.—Re-admitted owing to marked giddiness on dressing middle ear and marked fistula symptom. Left ear normal. Palliative and X-ray treatment, which latter was given five times.

30.11.31.—Wound cavity epithelialised. Whisper range at 50 cm. Fistula symptom not obtainable.

In commenting on the character and cause of the case, the exhibitor emphasised the good therapeutic value which he thought was obtained by X-rays.

Bilateral Purulent Cavernous Sinus Thrombosis following a Furuncle of the Eyebrow—J. HOFER.—A woman of 21, some days after a furuncle on the inner extremity of the left eyebrow had com-

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pletely healed, complained of fever and severe headache in the left frontal region, when œdema of both eyelids was noted, with paresis of the external rectus and slight deviation of the eyeball. In two days' time these eye symptoms had almost completely disappeared, but on the third day similar appearances occurred in connection with the right eye, which in twenty-four hours time had increased to extreme œdema of both eyelids, chemosis and extreme protusion of the eyeball—which latter was immobile. Death occurred two days later.

Post-mortem examination revealed purulent thrombosis of both cavernous sinuses—the left being still just permeable but the right completely occluded—whilst the hypophysis was also invaded by the inflammatory lesion.

Squamous Epithelioma of the External Auditory Meatus involving the Middle Ear and Brain—M. TAMARI.—A specimen was shown from a woman aged 48 who had been admitted to Neumann's clinic with a suspicious tumour in the outer meatus, said to have followed eczema which had commenced in June 1931.

On admission, the right ear was already totally deaf, but rotation gave a normal response, due to compensation.

As the patient declined operation, combined radium and X-ray treatment was carried out. Two months later the growth had broken through the mastoid process, with a complete paralysis of the facial nerve, in spite of which condition the patient still declined operation. During the next two months the patient did not report for treatment, but in October 1931 was admitted unconscious, with obvious meningeal symptoms and severe destruction of the mastoid process, and died almost at once.

At the post-mortem examination, the growth was found to have involved the middle cranial fossa and the cerebral hemisphere was largely covered with offensive purulent matter, with an abscess in the temporo-sphenoidal lobe.

Symptomless Cerebellar Abscess. Sinus Thrombosis—E. RUTTIN.—A woman of 34 was admitted on the 21st September 1931 with a history that for some years she had suffered from a right-sided suppurative otitis media and from headache and giddiness for the last week, but without tinnitus.

Examination.—*Right ear*—Perforation of the anterior inferior quadrant of the membrane; slight purulent secretion. Conversation range 2 metres. Weber to the right. Rinne, negative. Bone conduction increased. No mastoid tenderness, fistula symptom, spontaneous nystagmus or by-pointing, and caloric reaction prompt. Ocular fundi normal. No meningeal symptoms.

1.10.31.—Still no spontaneous nystagmus, by-pointing or slowing

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of the pulse-rate, but slight neck stiffness and the fever 36 to 39° present on admission still continued—the cause of this was obscure both to the exhibitor and the physician who also examined her.

Sinus thrombosis could not be excluded but yet definite diagnosis of the same could not be made. Exploratory radical operation was under consideration but was postponed owing to the extraordinarily poor condition of the patient.

5.10.31.—Death.

Post-mortem Examination. — Large abscess found in the right cerebellar hemisphere together with thrombosis of the sinus.

In his commentary, the exhibitor remarked on the extraordinary lack of local symptoms and the difficulty in deciding on the correct form of treatment in this case.

Carcinomatous Metastasis in the Inner Meatus on both Sides—E. RUTTIN.—A man, aged 31, who a year ago had been operated on for a carcinoma of the stomach was first seen by the exhibitor on the 9th November 1931, with the story that two months before he had gradually become deaf in the right ear, with accompanying paresis of the right face and giddiness.

On the left side he had suffered from otorrhœa for some years, but for the last few days only was this accompanied by pain and complete deafness and blindness.

Examination.—Right ear—Membrane opaque and indrawn. *Left ear*—Chronic otitis media. Deafness for speech and tuning forks with loss of caloric reaction both sides. Spontaneous nystagmus to the right on looking to the right. Spontaneous nystagmus downwards on looking to the left; unaffected during the caloric test either side. Patient died in a few days.

Post-mortem Examination.—Ulcerative recurrence of the growth found in connection with the original intra-abdominal lesion and further deposits in the neighbourhood of the internal auditory meatus on each side.

ALEX. R. TWEEDIE.

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