when the speaker was two years old, and that fact kept the years during which the investigation had been carried on still in Dr. Proetz' lifetime.

He agreed with Mr. Lowndes Yates about changes in surface tension, but that subject would open up another long discussion.

In answer to Mr. O'Malley, he did not wish to give the impression that the cilia and the surface mechanism were the entire defence agency but that they were of major importance. There was, for instance, all the work which had been done on the reticulo-endothelial system, work which in this contribution he had not touched upon. The cilia must be looked upon as the first line of defence, and so they were of the utmost importance.

The nose did not depend on the cilia alone for cleansing itself, as was shown by Hilding, who sewed a rabbit's nostril and left it so closed for six weeks. When he re-opened it he found that the effect of ventilation on the open side was to destroy the cilia and bring about a change in the surface which amounted to squamous epithelium, and greatly increased the number of what appeared to be goblet cells, i.e. the nose had thrown out an excessive amount of mucus. Where the nose had been kept closed, there were no further cilia, simply stumps. The cells were not destroyed, but the cilia were not functioning. After the nostril was opened again, the cells became normal. The wide side corresponded from a functional standpoint to what was seen in atrophic rhinitis.

Perhaps his intensity of purpose had made some think his idea was that the nose was made of cilia, but such was not the case; still, he thought the part played by cilia had generally been underestimated.

V. E. NEGUS, replying to Dr. Jobson, said that menthol had been tried by Professor Leonard Hill in an oily solution. He found that it had no harmful effect on the cilia.

AUSTRIAN OTOLOGICAL SOCIETY

Meeting May 29th, 1933

Abstract of Proceedings from Monatsschrift für Ohrenheilkunde, August, 1933

By ALEX. R. TWEEDIE

CASES

Recurrent Mastoiditis. Thrombosis of Sinus and Bulb. Operation. Recovery.—M. BARWICH.

A girl, aged 10, was admitted to Hospital on *April 26th*, with the history that in *December*, 1931, mastoidectomy had been performed for relief of right sided acute otitis media, and a peri-sinus abscess

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press

had been opened at the same time. In a few weeks' time the wound had healed completely and it was not until about two weeks ago that, following a severe sore throat, the right ear had again become affected. A paracentesis had been performed but without any appreciable relief.

Examination.—Right ear: Further slight pulsating secretion occupied the meatus. The membrane was injected and infiltrated but no perforation was visible. The post-aural scar was white and not tender.

Left ear: Normal appearance. Temperature 40·8°.

May 8th, 1933.—Up to this date the temperature had varied considerably but had now subsided, whilst the general condition of the patient was good. It was noted, however, that the post-aural scar was now slightly injected and that there was some tenderness of the adjacent parts.

May 9th, 1933.—The child suddenly became worse, complained of headache, and vomited frequently.

Examination.—Right ear, no otorrhœa. Membrane red and no details visible. Cerebrospinal fluid clear. No raised pressure, no increased cell content.

Ocular examination.—Both papillae slightly swollen, the left being affected rather more than the right.

Operation.—It was found that the cortical bone had re-formed and required removal with a chisel, after which the old operation cavity was found to be filled with markedly swollen mucous membrane, but very little free secretion. The lateral sinus was surrounded by thick scar tissue through which an exploratory puncture was performed, and disclosed thrombosis. The sinus was, therefore, freely laid bare in both directions, its wall was removed, and a large thrombotic mass was evacuated without, however, any bleeding occurring until further removal of clot with the small curette, and then only from the torcular end. The posterior meatal wall was also removed and the antrum was freely exposed. The tegmen was also removed in order to inspect the dura of the middle fossa, which was found to be normal in appearance.

The jugular vein was then ligatured below the opening of the common facial vein, which latter was also tied, as well as two other communicating veins in the neighbourhood. The lower end of the upper portion of the jugular vein, which was found to be empty, was then brought up to the surface of the wound and there stitched to the skin.

Further convalescence of the patient was uneventful and she was discharged for out-patient observation on *May 25th*, 1933.

In commentary, the Exhibitor drew attention to the remarkable fact that no bacterial growth was obtained from the thrombus or from the secretion in the mastoid.

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press

Austrian Otological Society

Mucosus Mastoiditis with Rupture into the Meatus. —E. RUTTIN.

A child, aged 12, who suffered from epilepsy, but was otherwise healthy, was admitted to Hospital on *April 18th*, 1933, with the history that she had suffered from earache and otorrhœa on the left side nine weeks previously, all of which had soon ceased. The condition was not associated with any headache, giddiness, tinnitus, or fever. She had first been seen by the Exhibitor on *March 3rd*, when a small swelling was observed in the meatal wall which suggested a furuncle, but since the introduction of a probe revealed bare bone, it was thought wise to take her into the Hospital.

On the day of admission the left tympanic membrane appeared grey and cloudy, but all details were visible. The meatus was normal in calibre except that on the postero-inferior portion of the bony meatus, a small swelling was visible, with a sinus at its apex surrounded by granulations. Hearing: Whisper at 4 metres. Weber to the left. Rinne negative. Bone conduction increased. No spontaneous nystagmus. No fistula symptom. Right ear normal. Ocular fundi normal.

X-ray examination showed that the tegmen and sinus plate were intact but that the antrum was hazy and the cells of the posterior meatal wall gave the appearance of partial destruction.

May 5th.—As the condition of the patient was not satisfactory, the local appearances were unaltered, and in view of the X-ray report, mastoidectomy was undertaken, when pus and granulations were found in the apex, with a fistula leading from it into the meatus, whilst another similar focus was exposed in Korner's septum, but the antrum itself was only slightly, although similarly affected and no connection was found between it and the other lesions. Streptococcus mucosus was cultivated from the pus taken from the mastoid.

The Exhibitor stated that some time ago he had had an almost parallel case in which the swelling of the posterior meatal wall was first regarded as a furuncle, and in that case a large extra-dural abscess in the posterior fossa was also found. In both these cases, the pathological process had persisted for a long while without symptoms.

In this case the fistula and the results of the X-ray examination had been the chief indications for operation.

Acute Suppurative Otitis Media. Herpes Simplex Labialis. Pneumonia.—R. LEIDLER.

A boy, aged 13, was admitted to Hospital on *April 24th*, 1933, complaining of severe earache for the last two days.

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press

Examination.—Temperature up to 40°. Acute otitis media, left. Paracentesis was performed and was followed by blood-stained serous discharge, which ceased the following day, when paracentesis was repeated. The general condition did not improve and, as on further examination pneumonia was discovered, he was transferred to the Children's Ward.

The patient was now shown, recovered, in order to raise the question of the inference to be drawn from the occurrence of herpes simplex in connection with otitis media. Based on previous experience, the Exhibitor committed himself to the statement that the appearance of herpes labialis, during, or more especially at the commencement of, an attack of otitis media, associated with unusually severe general symptoms, indicated some other disease, such as pneumonia, influenza, or epidemic meningitis, rather than a complication of an aural lesion, since herpes labialis (not herpes zoster) almost never occurred with otitis media. In this connection he also drew attention to the fact that it became a point in the differential diagnosis between typhus and pneumonia, as it was never found in the former disease. He further suggested that it might be worth while to inject the secretion from herpes simplex in cases of otogenous meningitis, since injection had apparently been of some value in cases of epidemic meningitis.

Various members took part in the discussion which followed, the chief points which arose being that according to some, the occurrence of herpes labialis in acute otitis media was not infrequent ; that the appearance of the tympanic membrane in cases of otitis media associated with pneumonia was so characteristic as to constitute a definite point in diagnosis of pneumonia ; that the question as to whether the herpes occurring in connection with otitis media was really due to an invisible virus, or associated with trophic disturbances dependent on involvement of the trigeminal nerve had not yet been determined ; that herpes labialis was sometimes found in connection with brain abscesses ; that as early as 1906, investigations had been made in Politzer's Clinic, when the content of the herpetic vesicles had been inoculated into both the anterior chamber of the eye and the intradural spaces in rabbits, followed by symptoms similar to those of encephalitis lethargica, but that such secretion had always been found sterile.

It was, however, generally agreed that the appearance of herpes labialis at the commencement of an attack of otitis media, could justifiably indicate the probability of a concurrent pneumonia.

Sub-Acute Suppurative Otitis Media. Meningo-Encephalitis. Operation. Recovery.—R. LEIDLER.

A boy, aged 10, some two years ago had been submitted to operation on account of otorrhœa with deafness and pain behind the

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press

right ear, associated with fever, vomiting and giddiness (these symptoms after ten days' observation increased in severity). At the operation the cells were found to be occupied with pus, but exposure of the sinus and the dura of the middle cranial fossa, revealed a normal condition in both these situations. Convalescence was slow and complicated by irregular fever.

He had been re-admitted to Hospital on *January* 31*st*, 1933, with the report that he was giddy, had vomited, the temperature had risen to 40°, and the cerebrospinal fluid contained 28 cells to the cubic centimetre ; that the leucocyte count on blood examination was 40,600, and that there was tenderness over the mastoid process.

Examination of the right ear revealed an offensive otorrhœa with a destroyed membrane and granulations occupying the tympanum. At the operation on the same day (*January* 31*st*, 1933) the antrum was found to be full of granulations, and the dura in the exposed middle cranial fossa was the seat of localized meningitis, whilst the tegmen of the antrum and walls of the tympanum were partly replaced by a sequestrum.

On incision of the dura no pus was found, nor was any abscess revealed on further exploratory puncture of the brain.

During convalescence there was some anxiety owing to a rise of temperature complicated by abdominal pains, but fortunately neither the local condition, the cerebrospinal fluid, nor other examination gave any cause for alarm.

Acute Mastoiditis followed by Tuberculous Meningitis.
—RUDOLPH SINGER.

A report was made of a child, aged 5, in whom there were definite signs of tuberculous infection, including a positive reaction to the Pirquet test following a cold. An acute middle-ear infection developed with a temperature of 40·2°, which necessitated mastoidectomy. At operation the cells were found to be completely filled with pus, which also surrounded the bulb. As the sinus was filled with a red thrombus, the jugular vein was ligatured.

An uninterrupted recovery had followed but, three months later, owing to severe headache, further rise of temperature, and vomiting, the child was again admitted to Hospital.

Examination.—Ear and wound soundly healed. Papillitis, left. Paresis of buccal branch of left facial. Babinski indefinite. Irregular nystagmus. Cerebrospinal fluid 300 cells to the cubic centimetre, mostly neutrophil.

The wound was re-opened and the dura exposed ; the left temporo-sphenoidal lobe was explored, but with a negative result. General meningitis rapidly developed and was followed by death.

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press

Post mortem examination revealed tuberculous meningitis with similar affection of the cervical gland, both lungs, liver and spleen.

The report had been offered as showing the rather unusual combination of an acute mastoiditis with subsequent tuberculous meningitis, giving symptoms which simulated those of a cerebral abscess.

Fulminating Mucosus Meningitis.—E. RUTTIN.

In a woman, aged 61, a paracentesis had been performed on account of an acute otitis media with vesicles on the membrane. The doctor in attendance stated that, except for pain in the ear, there had been no other symptoms. On the day following the paracentesis, severe headache had occurred with tenderness of the eyeball, but no raised temperature ; a day later the patient became unconscious and when seen by the Exhibitor (five days after the initial symptoms) had already definite signs of meningitis. In the right ear, although the paracentesis wound was still open, the membrane was red but infiltrated, and there was a thin purulent secretion. The left ear was normal. The cerebrospinal fluid was purulent and showed the presence of considerable polynuclear cells and cocci in short chains and with a broad capsule.

Based on these signs and symptoms, a diagnosis of fulminating mucosus meningitis was made and a mastoidectomy was performed.

At the operation the mastoid cells were found to be filled with fluid pus and the antrum was occupied with granulations and, as a thrombosed vessel was found on the posterior part of the wound surrounded by granulations and extending to the dura of the middle cranial fossa, the whole bone was removed from the lateral sinus to the zygomatic area, the underlying cranial contents being exposed. It appeared obvious that the route of the meningitis had been *viâ* this thrombosed vessel, since the exposed dura was normal everywhere, as also was the sinus.

Lumbar puncture was again carried out, when the fluid was found to be more purulent and under marked pressure. 20 cubic centimetres were withdrawn and 10 c.cm. of normal saline with ·01 per cent. of Solganal was injected. The following day the patient died.

A pure culture of *Streptococcus Mucosus* was found in the cerebrospinal fluid.

The Exhibitor commented on the severity of the case, remarking that usually such complications did not occur till the fourth or even the seventh week after the occurrence of otitis due to infections of Streptococcus Mucosus.

https://doi.org/10.1017/S0022215100040640 Published online by Cambridge University Press