GRADENIGO'S SYNDROME.—ONE CASE-REPORT AND AN ANALYSIS OF THE PUBLISHED CASES.

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Gradenigo, in 1904, described a paralysis of the external rectus muscle occurring in acute suppurative otitic cases which together with other symptoms has become known as Gradenigo's syndrome. I presented in 1911 before the San Francisco County Medical Society, a case exhibiting this syndrome, the history of which was as follows: Early in June pain in right temporal region followed by suppuration of the ear and on June 22, operation with primary closure. Following the operation the patient complained of pain in the top of the head which persisted for months after all other symptoms had cleared up. Patient left the hospital ten days after the operation and was re-admitted July 9, complaining of double vision. The wound was opened, the clots and serum were removed; no pus found. Following this for a number of days there was headache in right frontal quadrant, burning sensation in lids on the right, gurgling sound back of the right ear, sleeplessness, dreaming and diplopia.

The various examinations gave crossed diplopia, right abducens paresis, movement out very little beyond median line, objects to the left and those in front at not more than twelve inches seen singly, those anywhere to the right seen double. Iris and corneal reflex normal, no ptosis. Superficial skin reflexes normal, deep reflexes strong, no Babinski, no ankle clonus. Fluid from spinal puncture ca. 9 ccm., clear, light-straw color, albumen normal, no sugar, no cellular deposits after centrifuging. On October 30 the patient had entirely recovered. I judged at the time that the primary closure of the wound was responsible for the abducens paralysis producing a meningeal irritation in the middle fossa and am inclined, after reviewing the literature, to accept this explanation.

Chas. E. Perkins has collected ninety-five cases which he has analyzed and to those collected by him I am able to add thirteen more. In these 108 cases the causes of the abducens paralysis were ascertained in only thirty-six with any degree of certainty. Of these, the causes were sinus thrombosis in two, meningitis in six, labyrinth disease in four, abscess in posterior fossa in nine,

in middle fossa in two, osteitis or disease of the petrous tip in thirteen.

But few autopsies were recorded in this series, most of them showing a purulent meningitis at the base of the brain, two recording a necrosis at the apex of the petrous portion of the temporal bone and one, Coulet's, a sarcoma. In Terry Smith's case there was a teacupful of serous fluid let out of the meninges at operation.

Reasoning from the pathology that we see in cases exhibiting similar symptoms in other parts of the body, third, fourth, eighth and ninth nerves, we might well be led to believe that it could be a variety of causes that could lead to this paralysis. If pressure, toxemia and an acute inflammation can all cause paralysis of the vocal cords, why can they not also be active causes of a paralysis of the sixth?

Baldenwick's cases were undoubtedly due to meningitis at the apex. Coulet's case was undoubtedly due to pressure of the sarcoma; Terry Smith's to pressure of the serous fluid in the meninges. The fact that so many recover would lead one to suspect that some very simple cause such as a transient hyperemia or a toxemia, as Tomassi suggests, alone was the fundamental basis for the syndrome. I personally consider that the most frequent cause is the local hyperemia and believe that in my case it was present when the pain in the vertex was complained of, that is, immediately after the operation.

Koellner throws some light on the general subject by giving an interesting analysis of 250 cases of sixth nerve paralysis occurring in the Berlin University Clinics of which 209 were paralysis of the sixth nerve alone. I append a table of causes as he found them:

Intoxications: Alcohol, 3; lead, 2; arsenic, 1, lumbar anesthesia (Stovain.), 1. Infections: Malaria, 1; influenza, 3; erysipelas (facial), 1. Diseases of kidney, 10. Diabetes, 1. Circulatory system, 5. Diseases of brain and spinal cord: Meningitis (chron. and tb.), 5; lues, cerebri, 13; lues, hereditaria, 2; tabes, 70; sclerosis multiplex, 7; polioencephalitis, 2; ophthalmoplegia chron. progressiva, 1; brain tumor, 13. Myasthenia gravis pseudoparalytica, 12. Hysteria, 3. Hemicrania, 4. Vasomotor dist., 4. Traumatic, 8. Otitic, 4. Paral. without known cause, 31. Congenital, 9.

That those paralyses accompanying otitic disturbances are not all due to the same cause he believes is shown very conclusively

by his reference to the four cases of Passow included in his table. One was, in all probability, due to a local serous meningitis; the second, on account of both nerves being involved with a one-sided ear affection, was in all probability due to a lead toxemia, the man being a worker in lead. The next died of a suppurative meningitis; the fourth had a probable alcoholism as a contributing cause.

These various causes of this very interesting syndrome have been aptly grouped by Alt (According to Schwarzkopff. *Die otogene Abducenslehm. Zentralblatt für Ohrenheilk.* Bd. 5. Heft 5.) as: 1. Reflex from the vestibulo-eye muscle nuclei. 2. Infectious neuritis. 3. An extension of an inflammatory process to the sinus cavernosus from the venous channels of the carotid canal. 4. Pressure paralysis through a serous arachnitis. 5. Deep disease of the temporal bone and a meningitis at the tip of the pyramid. To these may be added (6) a toxic neuritis.

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Acute Lesion of the Tympanic Membrane Due to the Use of the Telephone Receiver. E. FABRI, *Boll. delle Mal. dell'Orrecchio*, March, 1913, p. 49.

The author points out the peculiar injury to the tympanic membrane which results from the sudden change in air-pressure when the telephone receiver is held tight to the ear. Two cases of perforation in hitherto healthy membranes are recorded. As a preventative to such accidents the author recommends care in holding the receiver to the ears.

ED.

A FACE PROTECTOR.

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A number of years ago a New York professor called attention to the fact that in treating throats, if a glass was held in front of the doctor's face, the glass was covered with a fine spray from the patient's coughing.

For the treatment of throat infections I have devised this simple shield* (see cut) which has practically no weight and can be adjusted to any ordinary head mirror in no time. The transparent shield has a hole through which the ball on the back of the mirror

passes, and it is fastened below by clamps, which, after adjustment into position, are screwed fast. I have made another hole in the shield behind the "peek-hole" in order not to have the slightest obstruction to vision. This is not necessary, but as the composition-material of which the shield is made becomes scratched in time it necessarily interferes with perfect vision. By securing a plain lense to the back of the mirror as one of my friends has done complete protection is obtained. I have been using this shield for several years and at times it has been, to say the least, a great comfort.

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