ABSTRACTS.

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EAR.

Cure of Subperiosteal Abscess of the Mastoid by Paracentesis.—Salinger. "Ann. of Otol., Rhinol. and Laryngol.," September, 1917, p. 758.

The author records two cases of this condition in children of two and four years. He holds that patency of the squamo-mastoid suture was undoubtedly the potent factor. This suture is supposed to be closed by the end of the second year of life. During the course of the second year of life the mastoid becomes fairly distinct and consists of two portions—(1) the antero-superior or squamous portion, presenting a smooth exterior, and (2) the postero-inferior or mastoid proper, whose surface is rough and irregular. The persistence of the squamo-mastoid suture has been investigated by a number of authors. Kisselbach examined twenty-six bones from children aged one to two years, and found that the suture was entirely or partially open in 46 per cent. Even up to the age of nineteen the suture may be partially open. Kirschner found completely open sutures in 5 per cent of all cases. Kanasugi examined 4000 skulls and found 260 cases with both sutures partially open.

Another important factor is the remarkable resistance of the drum membrane in young children as compared to adults.

These facts explain the frequent development of subperiosteal abscess of the mastoid in the absence of any marked evidence of middle-ear disease. If the squamo-mastoid suture can transmit pus from the antrum to the cortical periosteum, it can also transmit pus from the mastoid cortex through the antrum into the middle ear. It is only in an acute case, where the drum has not been perforated and the middle ear drained, or where the perforation is inadequate, that one may counsel conservatism, and then only with the proviso that there be no other threatening symptoms. Where drainage through the tympanic membrane has been effected, and the fluctuation and œdema of the mastoid fail to promptly disappear, there can be no question as to the necessity of immediate incision into the bone. *J. S. Fraser.*

Subacute Mastoiditis.—Blackwell. "Ann. of Otol., Rhinol. and Laryngol.," December, 1917, p. 999.

According to Blackwell the acute period of mastoiditis may be said to cover anywhere from a few days to a week or more. As the acute bone tenderness disappears earache and throbbing cease, the temperature falls, and the condition becomes subacute, without the quantity or quality of the aural discharge having undergone any alteration. *Mastoid tenderness* is not a very prominent symptom in subacute mastoiditis. It is usually conspicuous by its absence or by being noted only on deep pressure. *Subjective pain* is a variable factor. Headache is much more constantly present than during the acute stage. It is chiefly nocturnal and usually intermittent. *Discharge* is the least constant factor in subacute mastoiditis. It may be profuse, thick and pulsating, it may be

a thin, scanty, mucous or serous exudate, or it may be entirely absent. *Audition:* In cases requiring operation the hearing in the affected ear is very much lowered. *External auditory canal:* The drumhead may present all the evidences of a severe mastoid suppuration, or may appear almost, though never quite, normal. The cause of premature tympanic resolution in subacute mastoiditis is the formation of a thick plug of organised granulation-tissue in the antrum, which tightly seals it. The drumhead and tympanum may thus appear more or less normal, although mastoid suppuration continues undrained until it (1) ruptures spontaneously again into the tympanum and re-establishes the aural discharge, (2) terminates in a solution of a table of the skull or (3) a spontaneous cure. The inflammation in the mastoid may present in the posterior bony canal, giving all the appearance of a furuncle of the posterior wall of the external auditory canal. The swelling may be cone-shaped, coming to a point and sloping away evenly in every direction. From the apex the pus discharges drop by drop. Behind this appearance a resolved drum may be seen. *J. S. Fraser.*

Carrel-Dakin Solution in Mastoid Surgery.—S. Berggren. "Nordisk Tidsskrift f. Oto-Rhino-Laryngol.," Bd. ii, No. 4, 1917.

In six cases of acute mastoiditis the post-operative treatment was carried out by means of Carrel-Dakin solution. From three to eleven days afterwards secondary suture of the mastoid wound could be made, and in five cases there was primary healing of the wound. Before suturing it is essential to determine the bacterial content of the wound. In employing the Carrel-Dakin solution it is also essential that the fluid come in direct contact with the walls of the wound cavity. The use of the solution in chronic otitis media and in acute otitis media was without result. In complicated cases of mastoiditis, *e. g.* in the presence of pyæmia, septicæmia, sinus phlebitis, etc., Daure recommends the Carrel treatment. *J. S. Fraser.*

Is a Modified Radical Operation Justifiable?—Kaufman. "Ann. of Otol., Rhinol., and Laryngol.," June, 1917, p. 543.

The author notes briefly that the operation has for its object the cure of suppuration, the repair of the drum membrane and the restoration of hearing. It has been asserted that a case requiring radical operation will not get well with a "Heath," and that a case that does get well with a "Heath" would have made equally good recovery with a simple. Kaufmann agrees that this is true to a certain extent. *Indications:* (1) Certain acute cases which have gone too far to yield to a simple operation, and, on the other hand, do not demand a radical. (2) Chronic cases with the disease confined to the antrum and mastoid proper, and the ossicles in place and a goodly portion of the membrane remaining.

J. S. Fraser.

Pathology of Chronic Middle-ear Suppuration.—G. W. Mackenzie. "Journ. Ophthal., Otol. and Laryngol.," April, 1917.

In spite of local and general treatment a minority of cases of acute middle-ear suppuration will either develop mastoid or other complications or else become chronic. The combination of factors that operated to produce the original acute suppuration may or may not continue to play a *rôle* in the chronicity of the process. Clinically, any discharge that finds its way through a perforation in the drum membrane and which

lasts over a prolonged period may be referred to as a chronic middle-ear suppuration. The Eustachian tube plays a *rôle* in the ætiology and pathology of chronic suppurative otitis media. Narrowing of the tube will produce retention of secretion in the middle ear at a time when drainage by this route is very essential to the healing of the perforation in the membrane. A tube that is over patulous permits secretion from the nose to be blown into the middle ear more readily than a normal tube.

Chronic mastoiditis is important in the pathology of chronic middle-ear suppuration. Cholesteatoma is one of the big factors which tends to keep a case of middle-ear suppuration chronic. A cholesteatoma after it has once begun never ceases growing so long as the matrix remains. Polyps are frequently found in a middle ear that is affected with chronic suppuration, the favourable locations being in the attic-antrum region and high up on the promontory. Granulations may be found in any part of the tympanum or its adnexa. In caries and necrosis the ossicles are more frequently involved (anvil the most frequent), but no wall of the tympanic cavity is exempt from ulceration and necrosis. The pathology of chronic middle-ear suppuration has little to do with the mesotympanum, for the reason that primary mesotympanic conditions tend toward spontaneous recovery because of the favourable drainage through the tube or by way of the perforation in the membrane. The tendency to chronicity is favoured originally by the extension of suppuration to the more remote recesses, while the process of suppuration is maintained by inadequate drainage and ventilation. *J. S. Fraser.*

Technique of Examination for Cholesterin Crystals.—G. W. Mackenzie. "Journ. Ophthal., Otol. and Laryngol.," July, 1917.

G. W. Mackenzie finds that the presence of cholesterin crystals is pathognomonic of cholesteatoma. They were found in all of 127 cases examined. *Technique.*—The ear should be cleaned with an ordinary syringe, or, better, with a Hartman canula, directing the stream of water into the attic and antrum region and collecting the washings in a black basin. The particles are then put on a clean glass slide and covered with an ordinary cover-glass and pressed down gently. No addition of water is necessary, as there is usually sufficient water clinging to the mass examined. No staining is necessary. Using a $\frac{1}{6}$ or $\frac{1}{8}$ objective the specimen is examined under the microscope. The secretion in chronic cases usually shows leucocytes, large epithelial cells, motile cocci and bacilli, and where cholesteatoma is present in the ear spaces cholesterin crystals. These are flat and rhomboidal in shape, occasionally with corners broken off. They are usually found in clusters, rarely singly. They are colourless, but in large groups may present a very light lemon tint. *J. S. Fraser.*

Gas Bacillus Infection of the Mastoid.—W. W. Carter. "Medical Record," July 21, 1917.

The interesting features of this case are—(1) The rarity of gas bacillus infections of the mastoid. (2) The unusual route through which the infection gained an entrance—namely, through the middle ear. The usual mode of entrance of this bacillus into the body is through an open wound or abrasion into which earth has been ground. (3) The prompt recovery following operation—an unusual sequel to gas bacillus infections, which usually succumb very quickly. *J. S. Fraser.*