SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

TREATMENT OF OTITIS MEDIA

BY

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For the purpose of description and the consideration of treatment inflammatory conditions occurring in the middle ear are conveniently classified as (1) catarrhal, and (2) suppurative. Each variety may be met with in an acute or a chronic form. No sharp line of demarcation exists either clinically or pathologically between these four types of otitis media, but an account of the treatment of a case representative of each provides a suitable means of discussing the subject.

Acute Catarrhal Otitis Media

This condition is characterized by its sudden onset, pain in the ear, some disturbance of hearing, and pyrexia, and is usually associated with inflammation of the nasopharynx. The diagnosis is determined from the appearance of the tympanic membrane. The external meatus must be thoroughly cleared of wax and debris before an attempt is made to study the condition of the drum. In a typical case the changes seen are a general loss of detail, absence of the cone of light, thickening of the whole membrane, poor outline of the handle of the malleus, and a dilatation of the blood vessels, particularly round the periphery and down the handle of the malleus. The tension and mobility of the drumhead are important and should be tested in every case. This is best carried out by means of Siegle's otoscope, which provides a magnification of two dioptries and a ready means of watching the movements of the drum in response to gentle alterations of air pressure in the external auditory meatus. The thickening of the tissues resulting from acute catarrhal inflammation increases tension and diminishes mobility, but the latter is not absent, as it usually is in suppurative otitis media.

The pathological changes which provide the clinical picture of acute catarrhal otitis media may either resolve or progress to suppuration. To aid resolution, general treatment for an acute febrile illness is given and special attention directed to the nasopharynx. Congestion is relieved and drainage facilitated by spraying the nose with 1 per cent. ephedrine in normal saline every four hours. Steam inhalations of tinct. benzoin. co. or menthol an hour or so after spraying the nose with ephedrine solution are both soothing and beneficial. It is particularly important that the patient be kept warm after having an inhalation.

The discomfort in the ear is relieved by local heat and the oral administration of aspirin. The local heat is best applied by the instillation of warm oily drops, 2 per cent. to 5 per cent. phenol in glycerin, or sedonan (Napp), into the meatus, and by covering the ear and adjacent parts with cotton-wool warmed before a fire, by a hot-water bottle, or by an electric pad if available.

Acute Suppurative Otitis Media

A most important factor in the management of acute catarrhal otitis media is the keeping of a careful watch for the development of suppurative changes. These are to be suspected where the constitutional symptoms tend to

increase, the temperature remains high, and there is a more rapid pulse rate, with persistence of pain. Repeated examinations of the membrana tympani will reveal the progress of events taking place in the middle ear. The alterations from the normal seen in acute catarrhal otitis media become more pronounced. The dilatation of blood vessels increases, but the reddening of the drum may be obscured by the desquamation of the surface epithelium, which is greyish, by the presence of red or purple haemorrhagic bullae on the drum, or by a collection of yellow pus in the middle ear. If the outer ear is carefully and thoroughly cleansed the meatus at its junction with the tympanic ring, particularly above, will be found to be acutely inflamed. In most cases a part or the whole of the membrane will be bulging into the meatus and gentle compression with a Siegle's speculum will fail to produce any movement. Frequently pressure over the tip of the mastoid process causes pain. When suppuration is present or is suspected in the middle ear adequate drainage must be provided by incision of the tympanic membrane.

Myringotomy

In itself this is a small operation, but one requiring great care and precision; it should only be attempted with the correct instruments on a patient properly prepared.

Instruments.—The aural speculum should be the largest that will fit comfortably into the meatus; an electric

FIG. 1.—Agnew's myringotome.

auriscope provides an efficient and suitable illumination, or the usual frontal mirror can be employed, but a good light is essential. There are several suitable patterns of knife, but Agnew's myringotome is probably the most

FIG. 2.—Siegle's speculum.

convenient. The important features are that it should be small enough to pass easily down the speculum and the meatus, have a short blade and a fine point (special care being taken to see that this is not bent), be very sharp, and be capable of being held so that the view of the

drumhead is not obscured. Aural dressing forceps and Siegle's speculum are not essential, but are most useful adjuncts.

Anaesthetic.—No local anaesthetic effectively anaesthetizes an acutely inflamed tympanic membrane, and general anaesthesia must be employed. Nitrous oxide and oxygen, ethyl chloride, or intravenous evipan are all suitable anaesthetics for this operation if properly administered.

Preparation.—The patient is prepared for a general anaesthetic, the outer ear being cleansed by washing and the application of spirit. The depths of the meatus should be swabbed out with spirit when the patient is anaesthetized.

OPERATION

Careful asepsis must be observed. Under direct vision carefully insert the aural speculum into the cartilaginous meatus and identify the drum. Maintaining a good view

FIG. 3.—Right tympanic membrane, showing position of incision.

of the field of operation, incise the membrane from below upwards throughout its length by means of a slightly curved incision just posterior to the handle of the malleus. The drum is immediately obscured by the escape of blood and pus into the meatus. They are removed by gentle mopping with pledgets of cotton-wool. With the aid of the Siegle's speculum any fluid remaining in the middle ear is aspirated and the incision carefully inspected to be certain it is large enough to provide adequate drainage. The meatus is again mopped out and the ear covered by a large pad of cotton-wool or fomentation.

AFTER-CARE

The most important point in treatment is the maintenance of adequate drainage. The condition to be dealt with is an acute abscess, and any interference with the free escape of pus will retard resolution. Such interference may be encountered at any of three stages during resolution:

1. Immediately after incision of the tympanic membrane the opening may become filled with blood-clot, thus preventing all drainage and defeating the one object of the operation. To prevent occlusion in this manner the ear should be inspected two to four hours after myringotomy has been performed. If any blood-clot is present this is gently extracted with aural forceps or removed by carefully syringing with warm boric lotion after the application of a few drops of hydrogen peroxide (10 vols.). When cleansed by this means the meatus is dried out with pledgets of cotton-wool.
2. When the discharge of pus from the middle ear is profuse, and cleansing either by syringing as described above or by frequent mopping is inadequate, the accumulation in the depths of the meatus causes irritation and sets up oedema, with further obstruction to drainage. In cases where the discharge is large in amount constant cleansing is required.
3. As resolution of the inflammatory process nears its end the discharge frequently tends to become thick and viscid. Neglect at this stage again leads to some obstruction to the escape of pus and consequent retardation of healing. The application of peroxide drops and syringing with boric lotion is the method of choice for cleansing.

Other causes of inadequate drainage are a perforation that is too small or is badly situated and the formation of granulations on the edges of the perforation. The former is overcome by enlarging the perforation, employing the technique described for myringotomy, and the latter by cauterizing the granulations. To do this, cleanse the external auditory meatus, introduce eight to ten drops of 10 per cent. cocaine, and keep in contact with the drum for ten minutes. Dry, then gently touch the surface of the granulations with solid silver nitrate fused on the end of a fine probe. While proper drainage is of prime importance, the prevention of an otitis externa has also to be borne in mind. A good prophylactic measure is to grease the meatus thoroughly with ung. hydrarg. oxid. flav. 1 per cent. at least twice daily.

Numerous kinds of drops, lotions, and powders have been advocated in the treatment of acute suppurative otitis media. For the most part their effect is confined to the external auditory meatus, and provided they are non-irritant their use is harmless. If the first principles of surgery described above are adhered to their use is unnecessary.

(To be continued)

HEALTH OF SCOTLAND

REPORT FOR 1937

The report for 1937 of the Department of Health for Scotland states that the improved standards of health generally have been maintained. The death rate of 13.9 per 1,000 showed no significant change over recent years, the increase in 1937 being largely accounted for by the influenza epidemic of the spring, which was the most serious visitation of the kind since 1929. A satisfactory feature was the low-record maternal mortality rate of 4.8 per 1,000 births, which was slightly less than that for 1936, though still in excess of recent rates for England and many other countries. Changes are taking place in the relative seriousness of disease—for example, morbidity statistics indicated that some 40 per cent. of the incapacity among insured persons was attributable to chronic sickness. School health statistics and inquiries showed that there was little malnutrition in the country, although shortages of important elements were noted in the diets of the very poorest and deficiency of milk in the diet of a large section of the population.

Infectious Diseases

During 1937 some 94,000 persons were notified as suffering from infectious disease, a decrease of 14,000 as compared with the previous year. The main factor in this decrease was a fall in the number of cases of measles, while against this whooping-cough was responsible for some 7,000 more cases and scarlet fever and influenzal pneumonia for 2,000 more in each instance. Tuberculosis as a cause of death maintained during 1936 and 1937 the low-record death rate of 74 per 100,000 established in 1935. The report points out that during recent years a good deal of research has been undertaken in Scotland to determine the extent to which human and bovine tubercle bacilli respectively are responsible for disease or death in human beings. In 1,579 pulmonary cases investigated the bovine type of bacillus was found to be responsible for the disease in 5.7 per cent., while in 201 meningial cases the percentage of bovine infections was 46.4 in children under 5 and 20.0 at ages 5 to 15. In 208 cases of bone and joint disease the corresponding percentages were 46.0 and 29.7. There has been a high incidence of diphtheria in Scotland during the past few years, and in 1937 there were 10,396 cases with 426 deaths. It is pointed out that schemes of immunization against diphtheria have made little progress and are in operation