SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

THE TREATMENT OF OTITIS EXTERNA

BY

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Classification

The affections of the auricle and surrounding skin, external meatus, and outer surface of the drumhead which are included in the term "otitis externa" may be grouped: (1) according to the infecting agent; (2) according to clinical type. Under the former heading the staphylococci, *albus* and especially *aureus*, are common offenders, aided in the seborrhoeic subject by the acne bacillus and pityrosporon. The haemolytic streptococcus comes a good second. In the former the pilo-sebaceous follicles are usually attacked, and may give rise to a boil; in the latter the deeper layers of the epidermis are infected, resulting in vesicles, fissures, ulceration, diffuse cellulitis, or erysipelas. Infections that occur more rarely are due to various moulds (otomycosis), the Klebs-Loeffler bacillus (croupous otitis externa), the tubercle bacillus, and other organisms. Clinically we have:

- (1) Chronic conditions:
 - Chronic seborrhoeic or "eczematous" dermatitis.
 - Otomycosis.
- (2) Subacute conditions or chronic conditions liable to exacerbations:
 - Acute seborrhoeic dermatitis.
 - Acute (impetiginous) dermatitis.
 - Recurrent furunculosis.
- (3) Acute conditions:
 - Acute diffuse otitis externa (usually a meatitis).
 - Acute circumscribed otitis externa, a furuncle.
 - Erysipelas.
 - Acute haemorrhagic otitis externa.
 - Perichondritis.

Contributory Causes

These may be constitutional—debilitated or depressed states (test the urine); or local—the seborrhoeic scalp, the irritating and infecting discharge from an otitis media, impacted wax. Finally, trauma may play a part, either self-inflicted by scratching or the use of matchsticks, etc., or due to careless or septic instrumentation.

Although I have put the contributory causes last, they are very important where treatment is concerned. Patients must be warned against scratching and poking their ears, and in the case of babies and young children this may be prevented by splinting the elbows. It goes without saying, also, that any practitioner who examines an ear or uses instruments therein should do so only under direct vision and with aseptic precautions. Local measures alone will not clear up a succession of boils in a poorly nourished or overworked body needing a holiday, and to treat an intertrigo or eczematous meatitis, which are a local spread, and leave the seborrhoeic scalp untreated is a waste of time.

Examination

Before any treatment is undertaken a careful examination must be made of the affected parts, and if possible the drumhead should be inspected. For this

purpose a few instruments are essential. An electrical self-illuminating auriscope is a very nice piece of apparatus for the inspection of a drumhead at the bottom of an unobstructed passage, but it is not easy to dry a meatus, remove debris, or insert therapeutic applications through it, and for these manœuvres (which must be done under direct vision) a head-mirror, or head-lamp, and a set of different-sized specula are much better. I prefer the type of speculum shown in the illustration, and usually

known as Keen's pattern; but everyone will have his particular liking in this respect, the only specification being lightness, moderate size, smooth rounding of the narrow or meatal end, and an easy grip for finger and thumb at the larger end. Add to these an aural syringe, a pair of light angled forceps (Keen's pattern, as illustrated, is satis-

factory), one or two fine wool-carriers, and possibly a fine, light, and not sharp right-angled hook for loosening and pulling out debris. Stainless steel, when available, is an economy in the long run. The syringe should be of all-metal type, and should take to pieces for cleaning and greasing. The nozzle should be fine, tapering, and smooth-ended, not bulbous; a "bayonet" fitting allows of its easy and rapid removal for filling the syringe. As the syringe must be controlled by one hand there must be finger rings at the proximal end, and it is wise to choose a syringe of a size that will suit your "span" when full. A word of warning here: always see that the component parts are firmly fitted together before use, and tip the nozzle up and empty the syringe of air. Nothing is more horrible, and to a child even frightening, than a blast of bubbles in the meatus.

When syringing, gently hold the pinna out and slightly upwards with the finger and thumb of the disengaged hand. Carefully cleanse out the auricle first and then approach the meatus cautiously, especially in children, insert the nozzle, and direct the stream upwards and backwards unless there is an obvious boil or tender swelling in that situation. In this direction a fair amount of force can safely be applied without causing pain at the drumhead, and most debris will be washed out by the return flow. For drying, the best quality fine white wool is advisable. Handiest of all are the small cardboard packets of sterilized wool used by dentists, from which as much as is needed can be pulled through a small hole. The wool may be used with forceps as thin pledgets or firmly

rolled in a thin flat piece on to an applicator so as to leave the end soft and fluffy. Sometimes, when the deeper parts of the meatus or drumhead are difficult to see, the swelling of the walls may be reduced by the insertion of pledgets soaked in cocaine 5 per cent. and adrenaline 1 in 1,000 in equal parts.

Differential Diagnosis

So important is the distinction between an otitis externa and an otitis media with mastoiditis that no apology is made for including here three cardinal points of difference. It should be pointed out that in very painful cases it may even be necessary to give an anaesthetic for diagnostic examination.

Post-auricular Oedema due to Furuncle or other Acute Inflammation of External Parts

1. Drum membrane usually intact, and may be normal or only slightly congested.

2. Pressure upon tragus and manipulation of auricle causing movement of fibro-cartilaginous meatus usually result in severe pain.

3. Pressure over the mastoid process just behind the post-auricular sulcus and opposite the orifice of the meatus will, if so directed as not to disturb the position of the auricle, cause absolutely no pain. The oedematous tissues pit deeply under the compressing finger, after which no bone tenderness can be elicited. Pressure at exactly the same point, but directed slightly forwards so as to disturb the auricle, causes severe pain.

Post-auricular Swelling due to Acute Suppurative Mastoiditis

1. Drum membrane usually perforated, and always shows some of the cardinal signs of suppurative otitis media.

2. Pressure upon tragus and manipulation or movement of fibro-cartilaginous canal cause absolutely no pain.

3. Firm pressure upon the mastoid process just behind the post-auricular sulcus and opposite the orifice of the meatus usually elicits deep-seated bone tenderness.

Treatment

This is largely a question of cleansing, drying, the application of suitable salves, the treatment of pain, and the prevention of reinfection. Now and again, but very rarely, the knife is needed, and in certain cases specific treatment is indicated. So far as general treatment goes it is probably wise to make it a rule to treat all bad cases of boils or otitis externa, whether febrile or not, in bed, preferably in an institution where all facilities are available. Owing to the tightness of the integument the pain of a bad boil in this region can be maddening—far worse even than a mastoiditis—and the debilitation of the patient is in proportion. The diet should be light and plain, and alcohol should be avoided in the acute stage, as the throbbing set up by even a small quantity may be intense. On general principles an initial purge is advisable. Plenty of fresh fruit and fruit drinks may be given.

In the treatment of pain there is very little to touch aspirin; for inducing sleep aspirin should be followed some fifteen minutes later by a hypnotic. Local and specific treatment will be discussed under each type separately.

For cleansing, plain boiled warm water, a solution of bicarbonate of soda—a drachm to the pint (especially where waxy debris has to be cleared)—boric lotion, or dettol 1 in 20 are all suitable. Dry scabs and scalliness may be removed with the aid of spirit soap. Peroxide, either as drops or lotion, should never be used. There is no particular virtue in it, and the frothiness merely makes the epidermis sodden and tends to spread the

infection. No patient with active or potential otitis externa should allow water to get into the ears except—and that not more frequently than is absolutely necessary—for cleansing purposes, after which they should be thoroughly dried, and may even be desiccated by swabs dipped in 95 per cent. alcohol.

Chronic Seborrhoeic Dermatitis

This is common in adults, and takes either the form of dry scalliness, which when shed leaves a glazed sensitive surface, or of thickening and desquamation with infection and fissuring and blocking of the meatus with debris.

The scalp should first be treated with frequent spirit-soap shampoos followed by thorough rinsing, and these should be continued at regular intervals after the parts have returned to normal. At the same time the meatuses should be thoroughly cleansed of debris, if possible without syringing, but better with it if attempts at dry removal are likely to lead to trauma. The skin of the meatus and any affected area on the pinna should then be smeared with a thin film of ung. hydrarg. oxid. flav. or zinc oxide cream. The first cleansing should be done, and the first one or two applications made, by the practitioner himself; he can then train the patient to smear in the ointment on a wool-headed matchstick. To make this, strike the match and then blow it out. A piece of fine wool is then firmly rolled around the blackened end between the finger and thumb, so as to leave plenty of wool over the end. The patient should learn to introduce the applicator with a gentle rotatory movement. When well an occasional smear in both meatuses should be a lifelong routine along with the treatment of the scalp.

Otomycosis

This is not very common in temperate or cold climates, as the growth of the fungus, often an aspergillus, is favoured by warmth and moisture. The mouldy appearance in the meatus is unmistakable. Otomycosis is relatively harmless and painless unless the mycelia invade deeply to the bone or through the outer layers of the tympanic membrane. It may set up an inflammation which leads to secondary infection. The essential in treatment is to avoid water and all oily or fatty applications. Even glycerin favours its growth. Spirit is the only application necessary. As much of the fungus as possible should be carefully swabbed away and the patient given 95 per cent. alcohol drops to instil twice daily.

Acute Seborrhoeic Dermatitis

This is merely a further stage of the chronic condition, with much soreness and fissuring, which may lead to secondary infection and boils or cellulitis. All fissures of the meatus, pinna, and post-aural sulcus should be cleaned, and painted with a strong solution of silver nitrate or cauterized with a silver nitrate pencil. Otherwise the treatment is mainly as above. Unguentum calaminae or the lotion is useful for the pinna and surrounding skin. If there is much exfoliation in the meatus an ointment containing 10 grains of salicylic acid to the ounce may be used, and in very intractable cases one or two skin doses of x rays may be tried.

Acute (Impetiginous) Dermatitis

This is most often seen in children, and may be associated with an otorrhoea or dirty scalp. Small pustules form which burst and become covered with yellow crusts.

There is often an associated lymphadenitis. It should be treated as an impetigo, and risk of contagion avoided. The hair should be cut well back from the ear or combed up and held back by a band. The crusts should be bathed away frequently and the raw surfaces covered with a smear of one of the zinc ointments mentioned above or ung. hydrarg. ammon. dil. It is a good plan to cover with a protective dressing at night to prevent scratching and the infection of other areas via the pillow. Any cause of reinfection such as pediculosis or otitis media must be treated. If there is much discharge from the meatus a wool swab may be loosely inserted, but all parts with which it comes in contact should be well greased to prevent it sticking and pulling away the inflamed epidermis.

Furunculosis

Boils in the ear may be single or multiple, and often a single boil will just have cleared up, only to be followed by another owing to the infection of a neighbouring hair or sebaceous follicle by the discharge from the first. The prevention of reinfection is therefore of prime importance. This may be accomplished: (1) by protecting the rest of the meatus; (2) by specific anti-staphylococcal treatment. The meatus should be cleansed, dried, and mopped out with 95 per cent. spirit. In all stages—irritation, swelling, and necrosis—I have found that the best treatment thereafter is to pack the meatus fairly tightly with a wick of half-inch ribbon gauze thickly impregnated with a paste composed of exsiccated magnesium sulphate, 2 parts, and glycerin with 2½ per cent. carbolic acid, 1 part, by weight. This should be changed once or twice in the twenty-four hours, the meatus being carefully cleansed each time, and the process continued as long as there is any swelling or a discharging fistula. The paste, being very hygroscopic, reduces the oedema and congestion, and the wick, by separating the opposing walls of the meatus, prevents cross-infection. If this treatment is continued for long the skin at the entrance to the meatus and over the lobe may become sore and cracked. This is best avoided by smearing with zinc ointment before inserting the wick.

Heat is comforting, and may be applied whether a wick has been inserted or not, either as poultices, a rubber hot-water bottle, an electric eye-pad, or as short-wave diathermy if available. The extravagant claims made for the last-named hardly appear to be substantiated by personal experience, but the comfort of the application is undoubted. As soon as the boil has aborted or has run its course, the core is expelled, and the fistula scabbed over, the meatus should be cleansed with spirit and smeared with a protective coating of ung. hydrarg. oxid. flav., which should be repeated nightly for some days.

The ordinary boil is much better not incised, but now and again a boil will burrow deeply and give rise to a meatal abscess, and then incision may be necessary. If there is no doubt as to the diagnosis, cutting is best done with a small curved bistoury or a furuncle knife *through the meatus*. Occasionally there may be a doubt as to whether a fluctuating post-auricular swelling is a meatal abscess, suppurating glands, or a subperiosteal abscess from a mastoid. Then it may be necessary to open for diagnostic purposes behind the auricle to see whether the collection is merely in the superficial tissues or whether bone has been bared.

In all staphylococcal infections specific treatment should be tried at the same time as local measures. Collosol

manganese intramuscularly or by mouth, stannous oxide by mouth, yeast, etc., are all successful in some cases, none in all. In recurrent cases vaccines, either stock or autogenous, should certainly be tried, but in my experience they are of no use unless the dose is carried much higher than usually recommended—up to 2,000 or 5,000 millions of the ordinary vaccine, for example.

Acute Diffuse Otitis Externa

This may be staphylococcal, but it is more commonly streptococcal. It is characterized by uniform swelling of all the walls and great narrowing of the meatus. It may not be possible to insert a wick, but glycerin and carbolic (2½ per cent.) drops can usually be instilled, and heat should be applied. If a haemolytic streptococcus is the causative organism, prontosil or its derivatives should be given.

Erysipelas

This has the characteristic raised edge at the margin of the inflamed area, but may be missed unless the patient is examined in a good light, preferably daylight. The danger is that the exquisite tenderness may lead to its being mistaken for an acute mastoiditis. Until quite recently it was a safe bet that if you had the infection over one ear it was certain to reach the other, and it might travel the circumference of the head anything up to three times before dying out, no treatment, local or general, being of avail. Prontosil has definitely changed all this. Probably the best local application is calamine lotion. The infection very often starts from a fissure; this should always be looked for, and should be dealt with after the acute infection has subsided.

Acute Haemorrhagic Otitis Externa

This fortunately is rare, but it is sometimes seen in epidemics of influenza. The walls of the meatus and outer surface of the drumhead are covered with haemorrhagic blebs, and the differentiation from acute otitis media may be difficult. Cocaine and adrenaline pledgets will often help to determine the outlines of the drum, and mobility of the latter on self-inflation is against middle-ear infection. Treatment is by glycerin and carbolic drops, dry heat, and prontosil.

Perichondritis

This usually arises as a result of exposure and infection of the cartilage of the pinna or meatus by operation or injury. It is a serious complication, as the cartilage offers no resistance and the resulting deformity may be severe. Abscesses must be opened and drained, but precipitate surgery is best avoided. It is unwise to incise haematoma owing to the risk of this complication. A "cauliflower ear" is usually a better sight than the results of perichondritis.

S. Miglioli (*Ann. Ist. Carlo Forlanini*, November, 1937, p. 60) states that injection of alcohol into the intercostal nerves in thoracic herpes zoster was suggested by E. Morelli in 1926, but was not carried out until 1936 by Buttafari and Cerulli. Miglioli reports the case of a girl, aged 17, under treatment for pulmonary tuberculosis by bilateral artificial pneumothorax, who developed herpes zoster over the area corresponding to the sixth to the eighth ribs on the left side accompanied by considerable pain. After injection of alcohol into the intercostal nerves for four days the pain completely disappeared.