EARACHE.

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COMMON CAUSES OF EARACHE.

By far the most common causes of earache are inflammatory diseases in or around the ear. Acute otitis media and boils or meatitis account for almost all cases.

With otitis media the pain will be felt in the ear, and some degree of deafness will be present. An inflamed drum will readily show the diagnosis.

In cases of mastoid infection there will be otorrhea, or at least an inflamed drum to be seen. The drum is never normal; occasionally it may present only the appearance of mild catarrhal otitis media. There is, as a rule, tenderness and often swelling over the mastoid process.

With boils and meatitis, definite swelling in the meatus is to be seen and, as a rule, one or more of the various groups of lymphatic glands around the ear are inflamed and tender, the pre-auricular, post-auricular, or upper group of deep cervical glands. It is an excellent rule in cases of doubtful meatal swelling always to compare the size of the channel with that on the other, and presumably the normal, side. In this way many slight degrees of swelling will be detected.

However, in a number of cases the patient complains of earache and nothing can be found wrong with the ear. Some of these are due to lesions near the ear, and others, to trouble in some place remote from the ear, the pain being referred.

Careful questioning and localization of the pain may show the correct diagnosis to be early mumps, or adenitis in one of the lymphatic gland groups above mentioned, and following septic sores on the face or head. In hospital practice, pediculi capitis are often responsible.

Occasionally arthritis of the temporo-mandibular joint is the trouble. Erysipelas of the scalp around the ear is another cause sometimes overlooked in a hairy scalp. An occasional cause is a small infected sebaceous cyst just behind the ear.

THE CAUSES OF REFERRED PAIN IN THE EAR.

There remain a large number of patients in whom no local lesion can be detected. In almost all of them it will be found that there is some trouble elsewhere in the face, nose, or throat, and that the pain is a referred one.

The pain is neuralgic in type. It may be felt as a constant ache in or around the ear. More often, however, it is described as a pain shooting to the ear or in the ear. Sometimes it is felt in front and sometimes behind the ear. Often it has been felt for a long time, some weeks or months, but, on the other hand, there may be free periods. Tenderness or hyperaesthesia of the skin over the mastoid is sometimes found, and less commonly flushing of the auricle or redness behind the ear may be noticed, being caused perhaps by some attempts at counter-irritation by rubbing, etc.
The Sensory Nerve Supply of the Ear.

It is necessary first of all to consider briefly the sensory nerve supply of the ear, and then to see what possible sources of pain there may be.

The auricle is supplied by the auriculo-temporal branch of the trigeminal nerve in its upper and anterior half, while the lower and posterior part is supplied with fibres from the second and third cervical nerves by way of the great auricular and lesser occipital nerves, which also supply the cranial aspect. The skin of the external auditory meatus receives most of its supply from the auriculo-temporal nerve and from Arnold’s nerve, the auricular branch of the vagus. These two nerves supply the outer surface of the tympanic membrane. In addition it is probable that the facial nerve, by means of the “ramus cutaneus facialis,” supplies sensory fibres to a small area of auricular and mental skin and also to the tympanic membrane.

The deep surface of the tympanic membrane, the middle ear, and mastoid cells receive fibres from the glosso-pharyngeal nerve by way of its tympanic branch (Jacobsen’s Nerve). In addition, the great superficial petrosal nerve passes between the geniculate ganglion on the facial nerve and the spheno-palatine ganglion attached to the second division of the fifth nerve. Thus the fifth, ninth, tenth, and probably the seventh cranial nerves, as well as the second and third cervical nerves, take part in supplying the auditory apparatus with sensory fibres.

The trigeminal nerve supplies the skin of the face and part of the scalp, the nose, teeth, palate, the greater part of the tongue, and part of the tonsil region and the naso-pharynx.

The pharynx, part of the tonsil area, and the posterior third of the tongue, are supplied by the glosso-pharyngeal nerve, while the vagus sends sensory fibres to the larynx and adjacent parts of the pharynx.

Apart from the chorda tympani nerve, the facial nerve has no other sensory distribution than that described for the ear. The skin of the neck is innervated by second and third cervical nerve fibres, which also supply the posterior part of the scalp.

Pain, therefore, may be referred to the ear from widely different parts of the head and neck, and one must not dismiss a case of earache as not of organic origin until all possible sources of pain have been excluded by careful examination.

It should also be remembered that the reflex may pass in the opposite direction. It is quite common when the meatus is touched with the speculum or a probe for the patient to cough and to say that there is a feeling of “something in the throat.”

Various sources of Referred Pain.

Teeth. By far the most common cause of referred pain in the ear is dental trouble. Severe aches or shooting pains are often due to unerupted and impacted wisdom teeth in the upper or the lower jaw. Commonly there is no local sign in the mouth of any trouble and an X-ray examination is necessary to disclose the mischief. Abscesses at the roots of teeth may be responsible and carious teeth will also cause symptoms. Occasionally tinnitus may be heard in the ear. Sometimes with infected teeth toxic nerve deafness accompanies the pain.

It is probable that the rubbing of their ears by infants cutting teeth is due to some referred sensations in the ears.


tonsils. For a few days after tonsillectomy there may be a complaint of earache and this is felt, as a rule, only during swallowing. It is necessary, of course, to exclude otitis media as a causative factor.

With quinsy pain is often felt in the ear.

In one patient who had been ill some weeks with scarlet fever, mastoiditis was suspected. The ear, however, was normal and, although there was no mention of throat symptoms, a very early peri-tonsillar swelling was found which developed into a quinsy. After this had been treated the earache was relieved.

Only recently a patient who had complained a good deal of earache had to have a small piece of tonsil removed as she was not infrequently experiencing attacks of inflammation. No lesion could be detected in the ear. At operation the small piece of tonsil was found buried in scar tissue and on removal was found to contain an abscess which was responsible for the ear symptoms.

Retained masses of débris in crypts and, rarely calculi, may give rise to pain in the ear.

Growths of the tongue and tonsil occasionally give rise to earache as their first and only symptom. Not long ago such a patient was seen. The first visit to his doctor was on account of earache and some weeks later there was bleeding from the throat, when a carcinoma involving the tongue and tonsil was found.

Pharynx and Larynx. Growths of the pharynx and larynx commonly cause earache. Very occasionally earache is the only symptom for some time. Similarly, with tuberculous or syphilitic ulceration of the larynx earache is often a symptom and at first may be the only one.

Impacted fishbones or other foreign body may give rise to earache and this is illustrated by the following case record of a child aged five years.

A girl was brought to hospital complaining of a pricking pain in the right ear. The ear seemed normal and no abnormality was noticed in the throat. The tonsils had recently been removed. The following week the child attended as an out-patient with a large cervical abscess on the right side. Examination of the lower part of the pharynx with a mirror disclosed the presence of an ulcer in the right pyriform sinus in the middle of which was a wire-brush bristle. This was removed and the abscess opened and the earache immediately disappeared.

Naso-Pharynx. Acute inflammation of the naso-pharynx causes pain in the ear. The following case is an illustration.

A patient complaining of very severe earache with considerable pyrexia was found to have a normal ear. On the corresponding side of the naso-pharynx just behind the Eustachian cushion a patch of yellow streptococcal membrane was found. After successful treatment the earache disappeared.

Naso-pharyngeal epitheliomata may give rise to earache, and deafness may occur through involvement of the Eustachian tube.

Sinuses. Referred pain in the ear from acute sinus disease is uncommon. It is occasionally seen with acute maxillary sinusitis; care must always be taken in these cases to exclude aural infection. With sphenoidal sinus infection, however, as Tilley first pointed out, earache is not uncommon. It is usually seen in association with acute infections, but may also occur in chronic disease. In this latter case the ear pain may go when "something bursts in the head." The pain in the ear may be so severe as to simulate mastoid infection.
Face and Neck. With attacks of herpes on the face earache is often felt. One patient who had recurrent attacks of herpes on one cheek always had earache in the ear of the same side accompanying it. When the auriculo-temporal nerve area is affected the earache may be severe. Thus herpes on the skin of the neck may produce earache and the real cause may be overlooked if the collar of the patient is not removed. With aural herpes, there is, as a rule, pain only at first. Later on vesicles appear on the meatal and auricular skin, and facial paralysis and other symptoms such as deafness, giddiness, and noises in the ear arise.

Other Causes. With glosso-pharyngeal neuralgia there is intense burning pain in the throat and the pain radiates to the ear. In some cases of trigeminal neuralgia the earache is marked. In sphenopalatine ganglion neuralgia the pain is referred to the ear. Earache may be felt where there is herpes of Arnold's nerve with vesicles in the meatus and is associated with vomiting. Sometimes the scars of mastoid operation give rise to pain.

There remain a small number of patients in whom no cause for pain can be found. In some of these, symptoms may be due to some obscure neuralgia, but a number are definitely of a functional nature. The two following cases are good examples.

(a) One patient, a girl of eighteen years of age, frequently came complaining of earache and mastoid tenderness. No cause for her pain was discovered. Finally one day the skin was seen to be very red, too red, in fact. The mastoid area had been rouged. The patient did not attend again after this was removed.

(b) Some months after a mastoid operation a patient attended with a curious looking ulcer over the wound and complained of great pain. Thinking that a small foreign body, such as a stitch or a small piece of gauze might be responsible, a search was made but nothing was found and with treatment the ulcer healed. A few months later a similar condition reappeared but this time it was obviously a burn, no doubt caused by a lighted cigarette.
Earache

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