Otitis externa

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HAVING on many occasions talked to doctors in different specialties, e.g. ophthalmology and gynaecology, I have never ceased to wonder how it is that we dermatologists often seem to see things through spectacles very different from our colleagues. An old teacher of mine often prefaced his lectures by saying, 'Gentlemen, strain and heredity—these are what matter in the whole of medicine'. This reminds me of the small boy whose father was reading his end-of-term report. The boy got in first, saying, 'Well, Father, which is it? Heredity or Environment?'

What then are the *Predisposing Factors* in Otitis Externa? (Table I). They may be *Genetic*—the patient may have inherited a narrow canal or abundant trachal hair; he may secrete excessive cerumen; his mastication may be inefficient; or in his family may be genetic traits leading to diseases such as asthma-eczema, seborrhoeic dermatitis, and so on.

TABLE I.
OTITIS EXTERNA. PREDISPOSING FACTORS

1.	*Genetic*, e.g.	narrow canal; excessive wax; inherited tendency to eczema, etc.
2.	*Environmental*, e.g.	heat; humidity; swimming.
3.	*Traumatic*, e.g.	hair-grips; matches; etc.
4.	*Infective*, e.g.	Staph. aureus
		Haemolytic streps.
		E. coli.
		Ps. pyocyanea.
		B. proteus.
		Fungi—C. albicans
		Aspergillus.

The precipitating factor may be *environmental*—the intense heat or humidity of a tropical climate, or much swimming and diving. *Trauma* plays a most important part although a secondary one. Many patients with a chronic otitis externa will confess to wielding some implement to relieve itching or to clear scales or exudation. McKelvie and McKelvie (1966) found that of 113 patients, 58 used wool-tipped matches; two bare match-heads; and seven hair-grips. Syverton and colleagues (1946) thought that half their patients scratched their ears with some form of instrument. Hearing aids and earpieces are more often traumatic than sensitizing agents.

Infection is often important and the type may depend on the climate.

Read at the Section of Otology Meeting, Royal Society of Medicine, on 2 February 1973.

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

In Scotland Staphylococcus aureus is the organism most commonly isolated, while fungus infections apart from C. albicans are decidedly rare. McKelvie and McKelvie (1966) in over 100 cases obtained sterile cultures in 12·7 per cent; Staphylococcus aureus in 37 per cent; Ps. pyocyanea in 16 per cent; Proteus vulgaris in 15 per cent, fungi in 10 per cent; coliform bacilli in 10 per cent; and Streptococcus pyogenes in 4·9 per cent. Conley (1948) in acute cases commonly isolated Ps. pyocyanea and Jones (1965) cultured pathogenic organisms in less than one-third of his patients. With the introduction of local and oral antibiotics and cortico-steroids, the incidence of C. albicans has been increasing steadily and even alarmingly. In Britain, the incidence of other fungal infections such as Aspergillosis is minimal.

Types of otitis externa (Table II)

TABLE II.
OTITIS EXTERNA. CLASSIFICATION

1.	*Seborrhoeic Dermatitis* sometimes leading to
2.	*Chronic Streptococcal Lymphangitis.* (Erysipelatoid).
3.	*Asthma-Eczema.*
4.	*Circumscribed Neurodermatitis.*
5.	*Contact Dermatitis*; e.g. chrome, nickel, rubber, nail-varnish, hair-dye, phosphorus sesqui-sulphide, medicaments, including Neomycin.
6.	*Psoriasis.*

1. The term *Seborrhoeic Dermatitis* is really a misnomer, for only in some cases is there overactivity of the sebaceous glands; yet no more suitable name for the condition has been approved. There may be a family history in these patients; or a history of infantile eczema affecting the scalp and flexures such as the ears or groins; while many confess to having had dandruff for years. These people tend to be plump rather than thin, fond of food and drink, and according to psychiatrists of a worrying, over-conscientious nature.

A thorough examination may reveal other seborrhoeic manifestations not only on the scalp, but also in flexures such as the natal cleft and submammary region. They may also show typical *Seborrhoea Corporis* of the presternal or interscapular areas. A *Retroauricular Eczema* is a common finding with an exudative otitis externa. Cultures may yield a mixed growth, though Staphylococcus aureus usually predominates. In women especially after combined antibiotic-steroid therapy C. albicans is relatively common. In those with Seborrhoeic Dermatitis a nasal swab often gives a culture of Staphylococcus aureus, and this may be the primary source of infection.

2. *Chronic Streptococcal Lymphangitis* or Erysipelatoid may result

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

from a chronic streptococcal infection of the outer ear and gives rise to gross oedema and erythema with recurrent attacks of swelling with malaise. This is a condition extremely difficult to cure and often a permanent oedema remains.

3. *Asthma-Eczema* may involve the outer ear with no other obvious skin manifestation, although one should examine the whole body. Almost invariably there is a family history of eczema, hayfever, asthma, migraine, etc.; the skin is often dry and there is a typical pale facies. The patient is often highly intelligent and extremely tense. Itching is severe and cutaneous lesions are thickened, dry and scaly except after scratching.

4. *Circumscribed Neurodermatitis*, in which there is sometimes a family history of asthma-eczema, often occurs after a chronic infection, ringworm or a Contact Dermatitis. The patient is a tense individual who has undergone considerable stress. Lin Yutang in his book 'The Importance of Living' mentions the old Chinese sage whose sixteen major pleasures of life included 'To have a secret patch of eczema to scratch occasionally'—and there is no doubt that these folk get an intense and guilty pleasure from their rubbing and scratching. The itching is spasmodic but severe, troubling the person little during the working day, and recurring in the evening or during the night. Psychiatrists have told me that this disease is an excellent safety-valve in those 'whose engine is revving too hard for their chassis'.

5. The elucidation of *Contact Dermatitis* is at once fascinating and frustrating. It may occur as a primary eruption affecting the auricle and spread into the aural canal, but frequently it is iatrogenic in origin. History is all-important and must be taken in meticulous detail. Patients complain of a hot burning sensation, very different from the pruritus associated with the diseases previously mentioned. Often the rash tends to heal and relapse for no cause obvious to the victim. In the acute case, vesiculation, erythema and oedema may be present. We should remember that three of the commonest substances to cause allergic reactions of the skin are chrome, nickel, and rubber (or rather the accelerators used in curing rubber). Any previous eruption, no matter how slight, may be of significance, e.g., a reaction to a wrist-watch strap, to a brassière clip, or from the Spandex of a girdle or brassière. The ersatz rubber used in these is cured with mercapto-benzothiazole, so that sensitivity to Sulphonamides may also be present. The same substance may be contained in nail-varnish, which does not cause reactions round the nails, but discrete erythematous patches on the eyelids, cheeks, neck and sometimes the ears. Hair-dyes, such as toluene-diamine, can also cause dermatitis in paradoxical locations, i.e. the scalp is often not affected, but the eyelids and ears are.

Matches are frequently used by patients in traumatizing the ears. Fregert (1962) has pointed out that some matches contain small quantities of chrome; another type of match, the Bluebell, sold only in Scotland and

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

the North of England, contain Phosphorus Sesquisulphide which is a potent sensitizer. When this is responsible for otitis externa, an eczematous patch may be found on the outer aspect of the thigh, from the striking surface of the matchbox in the trouser pocket. I well recall a dermatological colleague, an inveterate pipe-smoker, who was attacked by this type of dermatitis only when attending meetings in the North (Klaber, 1938).

Iatrogenic Contact Dermatitis is only too common. The worst cases I have ever seen were those inflicted by Otologists who had the deplorable habit of insufflating Sulphonamide powder. This seemed to delight them, as it certainly at once stopped any exudation, but of course it formed a tough concrete on the ear drum, and often led to a severe Sulphonamide Dermatitis, sometimes with light sensitivity. But we must let bygones be bygones! Nowadays probably the most common sensitizing drug used for the ears is Neomycin, which is purveyed by so many chemical firms in so many different forms. When the Neomycin is combined with a corticosteroid, the contact dermatitis may be very difficult to diagnose. It must be remembered that with Neomycin, one must use for patch-tests a 10 per cent strength to obtain a positive result. Quinoline derivatives, often so useful, produce their quota of reactions, and are very popular in the form of such preparations as Quinoderm, Betnovate-C cream, etc. I am sure that none of you Otologists ever use such dreadful things as local anaesthetic or antihistamine creams, so I only refer to them in passing, as a remarkable number of doctors still prescribe them. However, in consulting the section in MIMS dealing with drugs acting on the Ear, Nose and Oropharynx I find that of the forty-five preparations mentioned, no less than five contain local anaesthetics and nine Neomycin. Even the bases in some preparations can cause dermatitis, e.g. polyethylene glycol and the parabens.

Patch-tests are invaluable in the elucidation of cases of Contact Dermatitis. They must be used in the correct concentration, applied to a suitable area, such as the back, for 48 hours, and interpreted by one experienced in the reading.

6. *Psoriasis* may be localised to the outer ear, and usually follows a seborrhoeic dermatitis. It produces thick dry scales and other evidence of the disease can usually be detected on the scalp, the nails, the extensor aspect of the limbs or in flexures. The itching is usually not intense.

Histology

Biopsy is seldom indicated, for the histological picture is never specific. In most cases acanthosis and elongated rete pegs are found, with parakeratosis. In eczematous reactions, especially seborrhoeic dermatitis, spongiosis is of course present. The histological picture in circumscribed neurodermatitis may be difficult to distinguish from psoriasis.

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

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Differential diagnosis

Usually there is little difficulty about the diagnosis of otitis externa. In acute cases *Furunculosis* and *Herpes Simplex* must be considered. Occasionally *Herpes Zoster* affects the ear only and in the early phases is associated not only with intense pain but also intense oedema. Rarely, a *Foreign Body* in the canal, usually an ancient plug of cotton-wool, may simulate or cause otitis externa. This reminds me of the dim-witted man who always had tufts of cotton-wool projecting from his ears. When someone asked why Smith put cotton-wool into his ears, a friend replied 'Smith doesn't put cotton-wool into his ears—he just pulls it out!'

It is a good old rule that in differential diagnosis one should never forget Tuberculosis, Syphilis and Malignant Disease. An ulcerated *Carcinoma*, usually a Squamous Cell one, can mimic an otitis externa quite closely, and I have seen *Ulcero-nodular Syphilis* and *Lupus Vulgaris* mistaken for a chronic one. *Discoid Lupus Erythematosus* may affect the ear, sometimes commencing in the canal.

Treatment and its pitfalls

General principles

The first essentials are the taking of a detailed *history* and the *examination* not only of the ears, but of all the body, especially the scalp and the flexures. Often one will find lesions of Seborrhoeic Dermatitis, Asthma-eczema, Neurodermatitis or Psoriasis. Such findings are a valuable aid to accurate diagnosis and treatment.

Bacteriological Examination not only of the ears, but also of the nares and the perianal region should be carried out. If intranasal infection is found, Soframycin Nebulizer has been shown to be the most effective in dealing with staphylococcal infections. It is now known that hexachlorophene and chlorhexidine are of little use in sterilizing the skin, and we are seeing more and more cases of sensitization to these. Probably the old-fashioned Phenol is as good as any other for this purpose.

In acute cases, *relief of pain* is important and often very potent analgesics are required. For *relief of itching*, trimeprazine (Vallergan) 10 mg. only at night or thrice daily is probably as good as any other drug. Hot compresses, infra-red, or short-wave diathermy can prove valuable.

The patient must be warned that any form of trauma should be avoided, and, to rule out the possibility of Contact Dermatitis, a battery of patch-tests including nickel, chrome, rubber accelerators and neomycin may indicate the primary or a secondary cause. These should not be applied when the reaction is acute.

It is not my place to discuss cleansing of the ears and the removal of debris, nor the precise method of using packs, as you people know far more than I do about this.

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

Local Treatment depends entirely on the type of otitis externa present. In acute cases, the old-fashioned 8 per cent aluminium acetate, or (my favourite) strong solution of lead subacetate 5 per cent; Glycerine 5 per cent; distilled water to 100 per cent are excellent, and can be used as a wet dressing with waterproof backing applied twice daily at least to the auricle as well as by packs in the canal. Another old favourite is Ichthammol 5 per cent in glycerine used in the same way.

In the milder exudative types, paints or lotions are indicated. There is still a useful place for the aniline dyes; I prefer eosin in a 2 per cent aqueous solution or (even better) Castellani's paint diluted with equal parts of distilled water. With these it is wise to use a cream or ointment. In mixed infections, 2 per cent Acetic acid or isopropyl alcohol may have success when other measures have failed. A tried favourite is terracortril suspension containing terramycin, polymixin B and hydrocortisone, although its efficacy depends on the type of organisms isolated. Framycetin with dexamethasone is similarly useful.

It is not wise to use the quinoline derivatives in the acute or even subacute stages, as then they are more apt to cause sensitivity. When the skin is dry and scaly creams and ointments are indicated and we have many to choose from, such as terramycin-hydrocortisone; framycetin; clioquinol or halquinol with steroid creams like betamethasone valerate, triamcinolone acetonide, or fluocinolone acetonide. Like the dyes, these quinoline drugs can deal with Candida albicans as well as pyogenic organisms.

It is my firm belief that powders and pastes should never be applied to the meatus, as they can form concretions in the outer ear, analagous to, but not so severe as, the cement formed by the insufflation of sulphonamide powder which was once used.

When a staphylococcal infection involves not only the ear but also other areas, as in seborrhoeic dermatitis, an oral antibiotic is indicated. Of these, I find the most effective are oxytetracycline, lincomycin and clindamycin.

In really stubborn intensely itchy cases, fractional doses of X-ray or Grenz-rays are often highly effective, but in such patients one must try to discover the psychological factors which keep the disease active. As usual in medicine, every case of otitis externa is different and not only only the ears but the individual must be treated.

Many years ago, old Jonathan Hutchinson said, 'Our forefathers . . . were accustomed to prescribe for a man's temperament; we think only of his disease . . . Although to a large extent this change of sentiment has been the result of advance in knowledge, yet I think it might easily be shown that it has gone too far, and that we now unwisely neglect the study of these differences between man and man . . . .'

https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press

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https://doi.org/10.1017/S0022215100078294 Published online by Cambridge University Press