Furunculosis

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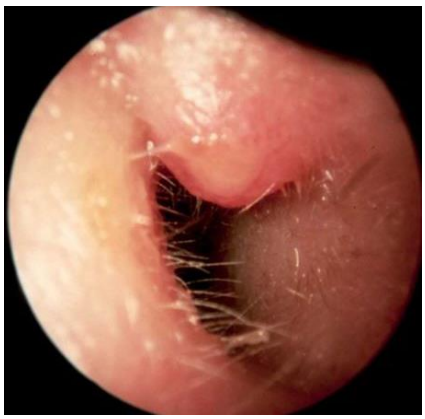
Definition

It is a localized form of otitis externa resulting from infection of a single hair follicle. Hair follicles are only present in the lateral (cartilaginous) portion of the external auditory canal. It is hence confined to the lateral portion of the external auditory canal.



Bacterial invasion of a single hair follicle results in a well circumscribed deep skin infection. As it progresses, a pustule forms and progresses to local abscess formation. There is also associated cellulitis and oedema. Initially bacteria attach to the cells of stratum corneum and proliferates around the ostium of the hair follicle. There is deeper invasion of the hair follicle between the inner and outer root sheath.

Diagnosis

Symptoms of this disorder don't usually differentiate furunculosis from diffuse otitis externa

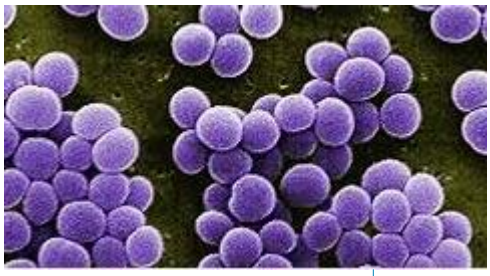
Histology is the gold standard for diagnosis of furunculosis, but is never obtained in routine clinical practice.

Postaural swelling and pinna being pushed forwards is a feature seen in both otitis externa and mastoiditis. In otitis externa there is tenderness while attempting to move the pinna while there is no tenderness in mastoiditis

Clinical features

1. The affected ear is painful.
2. It feels blocked.
3. There is scanty serosanguinous discharge
4. The pinna and tragus are tender on palpation
5. Otoscopic examination may be difficult because of tenderness
6. Oedema is restricted to the lateral portion of the external auditory canal
7. In advanced infections, the abscess may be seen to be pointing into the external auditory canal, or could discharge into the external auditory canal.
8. There could be oedema and cellulitis spreading to the post auricular crease pushing pinna forwards

Etiology & Epidemiology



Staph aureus is commonly implicated

Colonization of the external nares could also contribute to furunculosis of external auditory canal

Etiology

S aureus is known to express genes for Panton-Valentine leucocidine (PVL). This gene is known to release leucocidal toxin that could cause lysis of phagocytic cells.

Other predisposing factors include:
Hypogammaglobulinaemia
Diabetes Mellitus
Dysphagocytosis

If untreated this infection progresses to localized abscess which discharges into the external auditory canal. If it drains then infection could resolve spontaenously. Infection can also spread towards deeper tissues spreading to the pinna, post auricular skin and parotid gland. Repeated infections can cause permanent scarring and fibrosis of external canal with subsequent meatal stenosis. Ultimately, this could predispose to chronic diffuse otitis media.

Management

Bing a painful condition the primary concern is alleviating pain.
Tretment choices include:
Oral / systemic antistaphylococcal antibiotics (penicillinase resistant penicillin, macrolides, cephalosporin, clindamycin etc).
Anti inflammatory drug like ibuprofen can be given

If abscess has formed and has not drained into the external canal then incision and drainage can be performed.

Treatment options

Correction of nutritional deficiency:
Hypoferraemia
Low serum zinc
Correction of these deficiencies can help

Topical:
Antibiotic cream
Astringents
Hygroscopic agent like icthamol glycerine impregnated cotton wick can be placed inside the external auditory canal

In recurrent furunculosis the following options are available:
1. Eradication of focal infection with nasal mupirocin
2. Eradication therapy with oral flucloxacillin / azithromycin for 14 days
3. Bacterial interference therapy: This is done deliberately by implanting a non-pathogenic strain of S. aureus (strain 502A is the most popular) to recolonize the nares and skin