ONYCHOMYCOsis & THE MANAGEMENT THEREOF

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Onychomycosis

► Commonest dermatological condition

► Definition:

Infection of the nail caused by fungi that include dermatophytes, non-dermatophyte moulds and yeasts (mainly Candida).

► 80% of all OM affects toenails

► 90% of all cases caused by Trichophyton rubrum
Classification

- Distal & Lateral Subungual OM
- White Superficial OM
- Proximal Subungual OM
- Candidal OM
- Total dystrophic OM
History

- Usually asymptomatic
- Progression – interfere with standing, walking and exercising
- Paraesthesia, pain, discomfort, loss of dexterity
- Loss of self esteem and lack of social interaction
- Careful Hx reveals environmental and occupational risk factors
Anatomy of the Nail
White Superficial OM
**Proximal Subungual OM (PSO)**

- Most uncommon
- Dermatophyte – Trichophyton rubrum
- Enters through proximal nail fold
- Presents as area of leukonychia
- Invades root (matrix) resulting in marked periungual inflammation – intercurrent foot infection
- Moves distally with nail growth
- Mainly immunocompromised (HIV, PVD, DM)
“But I wanted a home under all your nails...”
Common yeast infection

Appears near cuticle – affects skin around nail – periungual inflammation – bulbous/drumstick appearance

Green, white or brown discolouration

May lift off nail bed

Chronic mucocutaneous candidiasis - where Candida infections affect other body parts (mouth, vagina), or immunodepression

Nail trauma, repetitive exposure to water

Difficult to treat
Distal Subungual OM (DSO)

- Most common
- Almost always Dermatophyte – Trichophyton rubrum
- Edge of nail plate (hyponychium) or lateral edges and spreads proximally
- Early detachment (onycholysis), streaks or patches of discoloration (usually yellow-white), subungual hyperkeratosi, eventual thickening
- Almost always Tinea pedis of surrounding skin
Distal Subungual OM
White Superficial OM (WSO)

- Second most common
- Toenails > fingernails
- Dermatophyte – Tinea Mentagrophytes
- Develops on top of nail plate (unique feature) – eventually spreads over entire nail-plate
- Tiny white (not cream) speckled or powdery patches on surface – nail dries out and surface flakes and crumbles
- Less frequent intercurrent foot infection
Proximal Subungual OM
Candidal OM

4 presentations:

i. Chronic paronychia with secondary nail dystrophy
ii. Distal nail infection
iii. Chronic mucocutaneous candidiasis
iv. Secondary candidiasis
Medical Care

Factors determining treatment type:

- Clinical type
- Number of affected nails
- Severity of nail involvement
- Goal? Reduce morbidity and prevent complications
- PSO and DLSO involving lunula region – systemic
- WSO & DLSO – topical agents
Reasons for Treatment

- Dermatophytes are relentlessly progressive
- Trivial cosmetic problem????
- Elderly, DM, PVD – cellulitis
- Surprisingly significant cause of medical consultation and absence from work
- Not a trivial disease – sound case for treatment on grounds of complications, public health considerations and the effect of quality of life
Topical Antifungals

- Several different types – prescription and OTC
- Paint or lacquer
- Amorolfine, Tioconazole, Salicylic acid, Undecenoates
- > ½ of distal nail plate or for pts unable to tolerate systemic Rx
- Generally unable to cure alone due to insufficient nail plate penetration
- Combination therapy improves cure rates & possibly shortens treatment duration with systemic preparations
Anatomical Presentation of Clinical Types
Differential Diagnosis

- Contact dermatitis, irritant
- Lichen Planus
- Malignant Melanoma
- Psoriatic nails
- Traumatic onycholysis
Laboratory Studies

- 50% dystrophic nail conditions are fungal
- Laboratory Dx prior to beginning a treatment regimen
- Time frame for nail growth
- Direct microscopy and culture
- Negative mycological result does not rule out OM
- 10% cases of direct microscopy negative
- 30% cases of culture negative
- Other – dermoscopy, histologic findings, staging
Treatment

- Topical and oral agents

- Primary aim – eradicate organism as demonstrated by microscopy and culture (primary end-point)

- Clinical improvement and clinical cure (secondary end-point)

- Combination of systemic & topical increases cure rate

- Rate of recurrence remains high though
Systemic Therapy

► Griseofulvin

► Terbinafine (non dermatophytes)

► Itraconazole (Candida)

► Fluconazole

► Ketocaonazole
Summary of Conclusions

1. No treatment prior to mycological confirmation
2. Dermatophytes are by far the most common causative organism
3. Yeasts and non dermatophytes are more likely secondary infections or saprophytic to previously damaged nails
4. SWO or distal nail infection respond well to topical therapy
5. Terbinafine > Itraconazole for dermatophytes