



TINEA: ONYCHOMYCOSIS

What is Tinea: Onychomycosis?

The term tinea generally refers to fungal infection of the skin and its appendages. Onychomycosis is a fungal infection of the nails. It is more common in adults and accounts for 50-60% of abnormal looking nails. Onychomycosis often results from untreated or unrecognised tinea pedis (fungal infection of the feet).

What causes Onychomycosis?

Onychomycosis is caused by various fungi such as dermatophytes, yeasts and less often non-dermatophyte moulds. Infections can spread from direct contact with an infected person or from public swimming pools, showers and change rooms. Other risk factors which predispose to onychomycosis include; repeated injury to the nail, prolonged use of occlusive foot wear, sweaty feet, advancing age, diabetes, a depressed immune system and other skin disorders such as psoriasis.

Dermatophytes are by far the most common cause of onychomycosis. The principal dermatophytes causing onychomycosis are *Trichophyton rubrum* and *Trichophyton interdigitale*

Candida (a type of yeast) often results in infections around the soft tissue of the nail (paronychia) and non-dermatophytic moulds (such as *Scopulariopsis brevicaulis* and *Fusarium* species) primarily affects toenails.

What does onychomycosis look like?

Onychomycosis can present in several different patterns.

In some people the nail becomes thickened and discoloured with white/yellow or orange/brown streaks in the nail plate. As the disease progresses the nail can separate from the nail bed.

Some people present with flaky white patches and depressions in the nail (pitting).

Onychomycosis sometimes present with yellow spots in the lunula (whitish moon or crescent shaped area at the base of the nail).

Others may present with swollen and red nail folds (paronychia) and white, yellow, green or black marks appearing on the adjacent nail. This is typical of a Candida infection.

What other problems can occur with onychomycosis?

If left untreated onychomycosis can lead to discolouration and deformation of the nail and in the long term to total nail destruction.

Rarely, secondary bacterial infections can begin around fungally infected nails if the immune system is suppressed due to long term medications or conditions such as diabetes.

How is onychomycosis diagnosed?

Your dermatologist will suspect the diagnosis based on the appearance of the nails and can confirm it by taking nail clippings from the end of the infected nail which will be examined under a microscope. The lab will also try to grow the fungus from the nail (culture). The results of the microscopy are usually available in a few days, but culture results can take about 5 to 6 weeks. In some cases, the dermatologist may also request a test called nail plate histology to confirm the diagnosis.

How is onychomycosis treated?

Treatment will depend upon the identity of the fungus. It can take several weeks to identify the fungus through cultures. Fingernail infections are usually cured more quickly than toenail infections. Onychomycosis has long been treated with topical antifungals but with variable success. Most cases need oral antifungals such as terbinafine, itraconazole, fluconazole or griseofulvin. Terbinafine is most commonly used over 3-6 months. If the nails are slow growing treatment may have to be prolonged beyond 6 months. In some cases, the dermatologist may request blood tests to check the liver function. In cases that fail to respond, other oral antifungals may be needed.

Non-Drug treatments that have been developed include; infra-red laser, photodynamic therapy and iontophoresis. Avulsion of the nail or removal of the infected area can be useful in certain circumstances.

Some practices may be helpful in preventing recurrence of onychomycosis such as; protecting feet in public bathing areas with appropriate foot wear, keeping feet dry throughout the day, wearing 100% cotton socks and changing them often and improving chronic health conditions (e.g. quitting smoking, controlling diabetes)

What is the likely outcome of onychomycosis?

Most onychomycosis, when treated early and correctly, will not result in permanent nail damage or deformity.

Follow up

Individuals who are diagnosed with onychomycosis should be followed up by a dermatologist during and after the treatment to monitor for side effects and ensure clearance of the disease.

*This information has been written by Dr Tabrez Sheriff and Dr Matheen Mohamed
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