Onychomycosis - Toenail Fungal Infection

Amanda Wojciechowski, MD  Family Medicine Resident Lutheran General Hospital

Onychomycosis or toenail fungal infection is common among individuals with Down syndrome (DS). Toenail fungal infections occur due to the weak immune system of individuals with DS but also are more likely to proliferate if one has a minor skin or toenail injury, dry cracked skin on the toes or sweaty feet due to prolonged closed-toe shoe wear. It presents often with yellow to white discoloration of the nail, occurring either at the top or the base of the nail, and can progress to becoming thick and brittle. Often more than one toenail is infected and there may be a foul odor present.

Other than the appearance of the nail, there are usually no pain symptoms involved. Sometimes, if the fungal infection has not been treated for a long period of time, some pain and inflammation may occur underneath or around the nail. Treatment for this infection may take many months or even a year due to the slow growth of toenails. Conservative treatment includes proper hygiene of the feet; making sure the individual washes his or her feet with soap and water and then drying the feet properly, as well as nail trimming. Cutting the nails are best done after a shower or bath because the nail is softer and easier to trim. If nail trimming becomes difficult due to the brittleness of the nail, an individual may need to be seen by podiatrist; a physician specialized in feet and ankle care, to maintain short nail length. In terms of topical treatments, one preparation that has been successful for some of our patients is Vicks VapoRub. It is not well understood why this works, but applying the cream or the ointment nightly before bed can help eliminate the fungus. This treatment takes many months for results to become noticeable, but it is a great treatment option as many patients tolerate the topical preparation with minimal side effects.
If home treatments have failed, prescription medications are the next step. Oral medications such as itraconazole (Sporanox) or terbinafine (Lamisil) are effective but may cause liver damage. These medications are taken for 3-4 months and close liver monitoring through blood work is often done. There are topical prescription medications as well. An antifungal nail polish called ciclopirox (Penlac) can be applied to the infected nail daily with minimal side effects. The nail polish is removed after a week with alcohol before applying a new coat. This process takes up to a year and is often less successful than oral medication. Other topical prescription preparations include efinaconazole (Jublia) and tavaborole (Kerydin). It is recommended to use these daily for 48 weeks. Success varies but generally less than oral medications. Some medicated lotions such as ketoconazole (Nizoral), econazole (Spectazole) and clotrimazole (Lotrimin) can be applied nightly and wrapped with gauze. Again, this treatment is less successful but has minimal side effects.

Lastly, if the nail infection is severe and causes pain for the patient, surgical removal of the toenail is done. A new nail will grow in its place, but it may take several months to up to a year to grow back fully. Sometimes a combination of ciclopirox and surgery is needed to help ensure that a healthy nail grows back. Alternatively, as part of the process of removing the nail, the nail bed can be destroyed with medication and the nail won’t grow back.

Overall, a toenail fungal infection is mostly harmless and medicated treatments may become cumbersome and cause some side effects. If an individual wishes to forgo any treatment option, minimally proper hygiene and trimming of the nails is recommended to keep the area clean and to prevent further infection.