

# Onycholysis

Onycholysis refers to the painless detachment of the nail plate from the nail bed. This condition is fairly common and can result from various causes, including trauma, infections, systemic illnesses, and skin disorders. While often harmless, onycholysis may sometimes signal underlying health issues, making thorough evaluation important.

## Pathophysiology and Etiology

Onycholysis occurs when the nail plate separates from the nail bed, disrupting their normal attachment. This condition can arise from several causes, including trauma, systemic diseases, infections, or medication use. Common causes include:

- **Trauma and Mechanical Injury:** The most common cause, especially in those with long nails. Pressure from the nail acting as a lever can disrupt its attachment. Artificial nails, excessive filing, or rough handling during manicures often exacerbate the problem.
- **Chemical Irritation and Allergic Reactions:** Exposure to chemicals, such as those in manicures, nail adhesives, or hardeners, can irritate the nail matrix and lead to onycholysis. Allergic reactions or prolonged water exposure can also weaken the bond between the nail and nail bed.
- **Fungal and Bacterial Infections:** Fungal infections, like onychomycosis caused by *Trichophyton rubrum*, and yeast infections from *Candida* species, frequently cause onycholysis. These infections often lead to discoloration (white, yellow, or greenish) and thickening of the nail. Bacterial infections, such as those caused by *Pseudomonas* species, may result in a greenish tint beneath the nail.
- **Systemic Conditions:** Diseases like psoriasis, iron deficiency anemia, and hyperthyroidism can contribute to onycholysis. Psoriasis often presents with additional nail symptoms, such as pitting and scaling. Generalized nail separation may occur with iron deficiency or thyroid dysfunction, particularly hyperthyroidism.
- **Medications:** Some drugs, including oxsoresalen, tetracycline, minocycline, and naproxen, can make nails more sensitive to sunlight. UV exposure can cause sunburn-like effects under the nails, leading to onycholysis.

## Clinical Manifestations

Onycholysis is typically characterized by the following clinical features:

- **Painless Separation:** The most obvious sign of onycholysis is the painless lifting of the nail plate from the nail bed.

- **Discoloration:** As the nail separates from the nail bed, discoloration may occur. This often presents as white, yellow, or green areas underneath the nail plate, indicative of potential infections. Green discoloration is usually associated with bacterial infections, while white discoloration is more commonly seen with yeast infections.
- **Multiple Nails Affected:** Onycholysis typically involves multiple nails, especially in cases associated with systemic diseases like psoriasis or iron deficiency anemia. Localized cases may affect only one or a few nails, often due to trauma or chemical irritation.
- **Infection Risk:** Once the nail separates, the space underneath provides an environment conducive to the growth of bacteria or fungi, leading to further complications such as onychomycosis or paronychia.

## Diagnosis

The diagnosis of onycholysis is primarily clinical, relying on the visual identification of nail separation. However, additional tests may be needed to determine the underlying cause:

- **Fungal Culture and Microscopy:** If a fungal infection is suspected, nail clippings or scrapings can be examined under a microscope using potassium hydroxide (KOH) and cultured to identify the specific organism causing the infection.
- **Patch Testing:** For cases where allergic contact dermatitis is a possibility, patch testing can pinpoint the allergen triggering the condition.
- **Blood Tests:** If a systemic condition like iron deficiency or hyperthyroidism is suspected, blood tests can evaluate thyroid function, iron levels, and other relevant biomarkers to confirm the diagnosis.

## Treatment and Management

The treatment of onycholysis focuses on addressing the underlying cause and preventing further damage. Key approaches include:

- **Addressing the Underlying Cause:**
  - For trauma-related onycholysis, it is important to avoid further injury by refraining from excessive nail filing, wearing tight shoes, or engaging in activities that strain the nails.
  - For allergic reactions to nail products, discontinuing the offending substances is essential. Topical corticosteroids may be prescribed to reduce inflammation.
  - Systemic conditions like psoriasis, iron deficiency anemia, or hyperthyroidism require targeted treatment. Psoriasis may be managed with topical treatments such as corticosteroids or calcipotriene, while iron deficiency should be corrected with supplements.
- **Infection Control:**

- For fungal infections, topical antifungals like terbinafine or ciclopirox may be sufficient for mild cases, while oral antifungal medications may be required for more severe infections.
- Bacterial infections should be treated with topical or oral antibiotics, depending on the severity, guided by culture results.
- **Moisture Management:** Patients should keep the affected nails dry and wear gloves when performing water-related activities such as dishwashing or cleaning. Prolonged water exposure should be avoided to prevent further nail separation or infection.
- **Topical Treatments for Drying:** Drying agents, such as 3% thymol in alcohol, can help reduce moisture under the nail and promote healing.
- **Surgical Interventions:** In severe cases, where the nail is significantly damaged or infections persist, nail removal (nail avulsion) may be necessary to facilitate healing and prevent recurrent infections.

## Prevention

Preventing onycholysis involves minimizing exposure to factors that can cause damage to the nails. Proper nail care is essential, including avoiding excessive filing, trimming, and the use of artificial nails or harsh chemicals, all of which can reduce the risk of trauma. Additionally, protecting nails from prolonged water exposure by wearing gloves during activities like dishwashing or cleaning can help preserve nail integrity. Early identification and treatment of fungal or bacterial infections are also crucial to preventing further damage to the nails and ensuring prompt healing. By following these preventive measures, individuals can help maintain their nail health and reduce the risk of onycholysis.

## Conclusion

Onycholysis is a common condition that can be caused by a variety of factors, including trauma, infections, systemic diseases, and medications. Although it is often painless, the condition can lead to complications such as infections and permanent nail damage. Effective management involves identifying the underlying cause, promptly treating infections, and implementing preventive measures to avoid further damage. Ongoing research into better treatment options and early detection techniques is crucial for improving patient outcomes and ensuring timely and effective care.

## References

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