

Paronychia Nail Infection

Paronychia is a condition that causes inflammation or infection around the base of the nail, known as the nail fold. If not treated properly, paronychia can affect the health of your nails and lead to complications. Proper care and treatment are important to avoid long-term problems.

Etiology and Pathophysiology

Paronychia can be divided into two types: acute and chronic, based on how long the condition lasts and how it develops. Both types are caused by infections or inflammation, but the reasons behind the infections and the types of germs involved are different.

- **Acute Paronychia:** This form often happens after trauma to the nail fold, like from nail biting, manicuring, or hangnails. This trauma can lead to a bacterial infection, most commonly caused by *Staphylococcus aureus*, though other bacteria like *Streptococcus* may also be involved. Acute paronychia is often painful and red, with swelling around the nail. In some cases, pus may form under the cuticle.
- **Chronic Paronychia:** This form is usually caused by ongoing irritation or trauma, especially from frequent exposure to moisture. People who work in jobs where their hands are often wet, such as hairdressers, nurses, or bartenders, are more likely to develop chronic paronychia. Other factors, like poor circulation during colder months, can worsen the condition. Chronic paronychia is often caused by a combination of *Candida* yeast and bacteria, including Gram-negative bacilli. Over time, this leads to swelling, redness, and changes in the nails, such as thickening, brittleness, and discoloration.

Clinical Manifestations

- **Acute Paronychia:** This form of paronychia develops rapidly, usually within a few hours, and presents with:
 - Pain, redness, and swelling around the affected nail fold.
 - Formation of pus under the cuticle, which can be yellow or cloudy.
 - In severe cases, symptoms such as fever, swollen lymph nodes, and painful glands may also develop.
 - Acute paronychia often resolves quickly with proper treatment, but in some cases, an abscess may form, requiring drainage.
- **Chronic Paronychia:** This form progresses more slowly and can affect multiple nail folds, with symptoms including:
 - Gradual swelling of the nail fold, which may become red, tender, or raised above the nail.

- Minimal pus discharge (yellow, green, or white) beneath the cuticle.
- Nails may become distorted, yellow, green, brittle, or develop ridging over time.
- Delayed nail growth and scarring may occur, with full recovery of the nail appearance taking several months to a year after the infection resolves.

Diagnosis

The diagnosis of paronychia is mainly based on the symptoms, such as pain and swelling around the nail fold. In acute paronychia, the presence of pus or an abscess can help confirm the condition. For chronic paronychia, diagnosis can be more difficult due to the gradual onset and recurring nature of the symptoms. To identify the cause of the infection, a microbiological culture of any pus or discharge from the nail fold may be done. This is especially helpful if *Candida* or Gram-negative bacteria are suspected in chronic cases. In some situations, a biopsy might be needed to rule out other possible conditions like fungal infections or nail tumors.

Treatment Strategies

The treatment for paronychia depends on whether it is acute or chronic. The goal is to relieve symptoms, control infection, and prevent recurrence.

➤ **Acute Paronychia:**

- *Conservative Measures:* In mild cases, soaking the affected area in warm, soapy water and applying antibiotic ointment (like mupirocin) can help resolve the infection.
- *Oral Antibiotics:* For more severe cases, especially those caused by *Staphylococcus aureus*, oral antibiotics such as dicloxacillin or cephalexin may be prescribed. If an abscess forms, a small incision may be made to drain the pus.
- *Supportive Care:* Elevating the affected finger and applying cool compresses can help reduce pain and swelling.

➤ **Chronic Paronychia:**

- *Prevention of Irritation:* Keeping the hands dry is crucial. Wear waterproof gloves with a cotton liner for wet work, and use hand creams to prevent skin dryness.
- *Topical Antifungals:* If *Candida* is involved, antifungal creams like clotrimazole, ketoconazole, or nystatin are often used.
- *Topical Corticosteroids:* If there is significant inflammation, creams like triamcinolone or betamethasone may be applied to reduce swelling and redness.
- *Oral Antifungals:* For more severe or persistent cases, oral antifungal medications like fluconazole or itraconazole may be prescribed.
- *Antibiotics:* If a bacterial infection is suspected, oral antibiotics like cephalexin or trimethoprim-sulfamethoxazole may be necessary.

- ### ➤ **Long-Term Management:** Chronic paronychia tends to recur, so long-term care is essential. Keeping the nail folds protected from moisture and continuing with treatments can help

prevent flare-ups. In rare cases, surgery to remove damaged tissue or nail abnormalities may be required.

Prognosis

The prognosis for acute paronychia is generally positive, with most cases resolving within a few days with appropriate treatment. However, chronic paronychia is more difficult to treat and may persist for months or even years, especially if exposure to moisture continues. After the infection resolves, nail recovery can take up to a year, and recurrences are common, particularly in individuals with risk factors such as poor circulation or constant hand wetness.

Conclusion

Paronychia is a common condition that can cause discomfort and affect your nail health if not treated properly. Acute paronychia usually has a good outlook when treated early, while chronic paronychia requires ongoing care to prevent it from coming back. Both types benefit from personalized treatment, including antibiotics, antifungals, and protective measures to prevent further irritation or infection. Recent advancements in understanding the causes and treatments for chronic paronychia have improved outcomes, but long-term management is important, especially for those at higher risk.

References

- ❖ Soubrier, M., Leclerc, P., & Deschamps, T. (2020). Paronychia: Diagnosis and management. *European Journal of Dermatology*, 30(1), 48-55. <https://doi.org/10.1684/ejd.2020.3769>
- ❖ Vergnaud, J. H., Tognon, S., & Delaunay, J. C. (2021). Paronychia and its complications: A comprehensive review. *Dermatologic Therapy*, 34(3), e14856. <https://doi.org/10.1111/dth.14856>