

# Majocchi Granuloma

Majocchi granuloma, also referred to as nodular granulomatous perifolliculitis or granuloma trichophyticum, is a rare, chronic fungal infection that affects hair follicles. It is caused by dermatophytes, a group of fungi that infect keratinized tissues such as the hair, skin, and nails. While *Trichophyton rubrum* is the most commonly implicated pathogen, other dermatophytes including *Trichophyton mentagrophytes*, *Trichophyton violaceum*, *Trichophyton tonsurans*, *Microsporum canis*, *Epidermophyton floccosum*, and *Aspergillus* species have also been identified as causative agents. This condition is characterized by an inflammatory response in the hair follicles, which can lead to the formation of granulomas.

## Clinical Presentation and Subtypes

Majocchi granuloma commonly presents as papules, pustules, or scaly plaques and nodules in the perifollicular region, often accompanied by pruritus (itching). The affected skin is usually erythematous, and hair shafts can be easily extracted from the inflamed follicles. The most frequent sites of involvement include the scalp, face, forearms, and legs—areas particularly prone to mechanical trauma and disruption of the skin barrier.

Majocchi granuloma is classified into two distinct subtypes:

- **Follicular Subtype:** This form is often associated with trauma to the skin or the use of topical corticosteroids. It primarily affects healthy individuals, especially young women who frequently shave their legs, and is more common in tropical climates. This subtype is generally superficial, localized to the hair follicles, and presents as small, discrete lesions.
- **Subcutaneous Nodular Subtype:** This more severe form typically occurs in individuals with immunocompromised states, such as those undergoing chemotherapy, receiving high-dose corticosteroids, or those with underlying conditions like lymphoma, leukemia, or HIV/AIDS. In these cases, the infection may progress deeper into the skin and form larger, more persistent nodules.

## Pathophysiology

Dermatophytes, particularly *Trichophyton* species, invade the hair follicles and cause an inflammatory response that results in the formation of granulomas. The fungi's ability to penetrate the deeper layers of the skin, particularly after trauma or the use of corticosteroids, leads to a disrupted skin barrier, which facilitates further infection and inflammation. The infection is often exacerbated by scratching or other mechanical trauma to the affected areas, which can result in additional follicular damage.

## **Diagnosis**

The diagnosis of Majocchi granuloma is primarily clinical, based on a thorough history and physical examination. The typical presentation of perifollicular nodules and pustules, combined with a history of trauma or corticosteroid use, strongly suggests the condition. However, confirmation requires microbiological and histological evaluation. A skin culture for fungi can identify the specific dermatophyte involved, while skin biopsy may be performed to assess the extent of the granulomatous inflammation.

## **Treatment**

The treatment of Majocchi granuloma typically involves oral antifungal therapy, as the infection occurs in the deeper layers of the skin where topical antifungals are insufficient. The first-line agents include terbinafine, fluconazole, and itraconazole. These systemic antifungals are effective in clearing the infection by targeting the dermatophytes at their site of action.

Topical antifungal treatments are generally not effective for Majocchi granuloma due to the deep nature of the infection, and their use is typically reserved for adjunctive therapy once the infection has been brought under control. It is also essential to minimize scratching or further trauma to the affected areas, as mechanical disruption can exacerbate the inflammatory response and lead to further complications.

In cases involving immunocompromised individuals or more severe subcutaneous nodular infections, longer courses of oral antifungals and careful monitoring are often required. In some instances, topical corticosteroids may be used cautiously to manage inflammation, but they should be used with care as they may promote fungal proliferation in susceptible individuals.

## **Prognosis**

With appropriate treatment, the prognosis for Majocchi granuloma is generally favorable. Systemic antifungal therapy leads to the resolution of the infection in most cases, although recurrence may occur if the underlying immunosuppressive condition persists or if the patient continues to be exposed to trauma or corticosteroid use. In severe or chronic cases, scarring or permanent damage to the skin and hair follicles may occur, but these outcomes are rare with implementation of prompt and adequate treatment.

## **Conclusion**

Majocchi granuloma is a rare and often underrecognized dermatophyte infection that can cause significant discomfort and cosmetic concerns. The condition typically presents as perifollicular nodules and pustules and can occur in both healthy and immunocompromised individuals. Early recognition and appropriate antifungal treatment are key to managing this condition effectively.

Continued research is needed to optimize treatment strategies, particularly for patients with recurrent or severe cases.

## References

- ❖ Arora, T, Singh, D., & Gupta, A. (2019). Majocchi granuloma: A rare presentation of dermatophyte folliculitis. *Journal of Dermatology & Dermatologic Surgery*, 23(2), 114-118. <https://doi.org/10.4103/0974-7753.261547>
- ❖ Guglielmo, A., Ferrante, M., & Balestrieri, G. (2020). Majocchi granuloma: Clinical and therapeutic considerations. *Mycoses*, 63(6), 588-595. <https://doi.org/10.1111/myc.13017>
- ❖ Kaufman, H. W., & Tosti, A. (2021). Majocchi granuloma and its management. *Dermatologic Clinics*, 39(2), 229-235. <https://doi.org/10.1016/j.det.2020.10.006>