Nodular Granulomatous Perifolliculitis due *to T. rubrum* Simulating Contact Dermatitis

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Two cases of a granulomatous form of dermatophyte infection, one of the wrists and one of the fingers, are presented. The lesions may be mistaken for contact dermatitis due to nickel jewelry. This type of reaction is best described as nodular granulomatous perifolliculitis.

Majocchi's granuloma is an uncommon granulomatous reaction to a dermatophyte infection of the hair follicle. This type of inflammatory change is noted most often on the lower legs of women who shave.[1] It may begin as an indistinct, erythematous scaling macule and become a grouped, granulomatous, nodular plaque. Concurrent *Trichophyton rubrum* dermatitis is often present elsewhere and may serve as the original reservoir of fungus. This is a report of two cases of nodular granulomatous perifolliculitis developing in men, simulating contact dermatitis due to nickel.

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Case Reports

Case I—A forty-eight year old white man was seen in November 1975 for evaluation of nodular lesions of two months' duration on the extensor surface of both wrists. The lesions began three weeks after he started wearing a new watch on the left wrist. The watch case was stainless steel and the band was bright metal. The patient was seen by a local physician and treated for nickel dermatitis for several weeks with topical steroids. Two weeks prior to seeing one of us (NM), the patient switched the watch to his right arm where a new lesion developed. The patient also had a fungal infection of the groin and feet that his local physician was treating with clotrimazole solution.

Physical examination revealed multiple firm, scaly, erythematous nodules and plaques grouped into a central pattern over the dorsal wrist surface of both hands (Figures 1 and 2). Some scaling of the toe webs and groin was present. A potassium hydroxide preparation of a specimen from the left wrist lesion revealed hyphal elements. A spot test for nickel (dimethylglyoxime) gave negative results on the back of the watch and positive results on the metal band. A patch test using 2.5 percent nickel in petroleum gave negative results after forty-eight and seventy-two hours. The patient stopped wearing the watch, and a biopsy was done.

Microscopic examination of the biopsy specimen revealed a chronic granulomatous reaction in the dermis, possibly about a hair follicle. The inflammation consisted of lymphocytes, histiocytes, and occasional granulocytes. Special stain revealed PAS-positive fragments in the inflamed area (Figures 3 and 4). Culture of the material from the wrist lesions revealed *T. rubrum*. One week later, griseofulvin, 500 mg daily, was begun. After six weeks, the lesions were completely resolved.

Case II—A second case has recently been seen by one of us (NM). A forty year old white man presented with an eruption of the dorsum of the right hand that had been present for approximately forty-five days. The patient stated that the dermatitis began under a pinky ring that he had recently purchased in Mexico. His local physician had treated him unsuccessfully, for a contact dermatitis, with Diprosone® cream. The lesion had not improved and had spread to the lateral portion of his hand.

Physical examination of the right hand revealed a sharply demarcated, erythematous, scaly, nodular, pustular eruption. Examination of the feet revealed scaly and macerated toe webs. A DTM culture of scrapings from the hand revealed *T. rubrum*. The patient was started on MicaTin® cream twice a day and Gris-PEG®, 125 mg, twice a day. After one month, the lesions resolved.

Figure 1. Bilateral nodular appearance over the wristwatch area.

Comments

The term Majocchi's granuloma has been used to describe a localized granuloma of the hair follicle caused by a dermatophyte. Perhaps a more accurate term is nodular granulomatous perifolliculitis,[2] which describes this unusual fungal infection of the hair follicle both histologically and clinically. Most granulomatous dermatophyte infections are reported in women who shave their legs and inoculate the dermatophyte into the hair follicle via the razor blade. The cases reported herein are unusual in that they could easily be misdiagnosed as contact dermatitis to nickel. The site of the granulomatous infection was most uncommon.

In the first case, the patient and his physician assumed that since the process occurred three weeks after the new watch was purchased, it was an allergic contact dermatitis. This was further reinforced when a second area of dermatitis developed after the

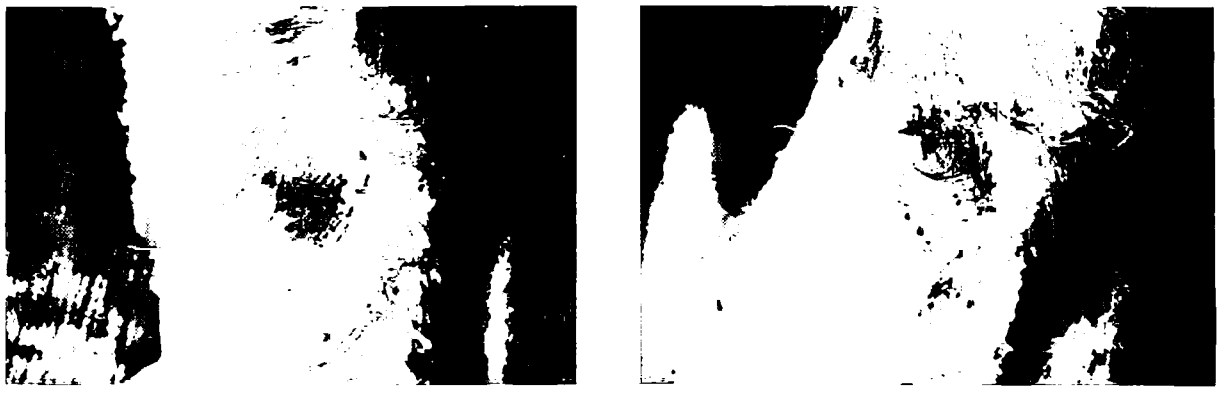

Figure 2. Close-up views showing the multiple erythematous nodular appearance of the infected hair follicles. Biopsy sites are evident.

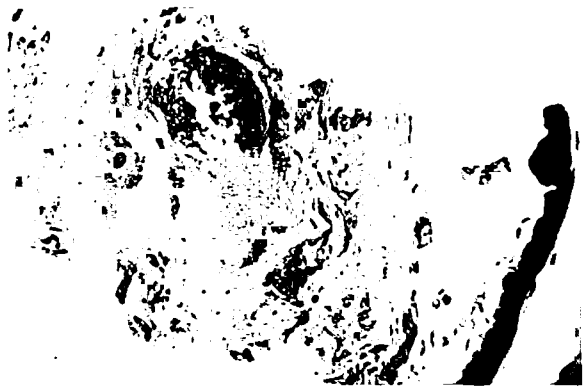

Figure 3. Subcutaneous chronic granulomatous inflammation (H&E; ×4).

watch was switched to the other wrist. The wrist is an uncommon site for spontaneous granulomatous infection but a very common one for nickel allergy. It is my belief that the patient had *T. rubrum* on the surface of the arm from an infection elsewhere (groin and feet) and that the occlusive effect of the watch contributed to the initiation of the infection. Continued occlusion and the use of topical steroids might also be responsible for causing a granulomatous reaction.

Nodular granulomatous perifolliculitis should be kept in mind as a possible diagnosis of any skin eruption developing under a watch band or bracelet.

References

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2. Hazelrigg DE, Williams TE, Rudolph AH: Nodular granulomatous perifolliculitis. *JAMA* 233: 270, 1975.

Figure 4. Subcutaneous chronic granulomatous inflammation (H&E; ×10)

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