Original Article

A Case of Confluent and Reticulated Papillomatosis Responsive to Ketoconazole Cream

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Abstract

We described here a case of a 43-year-old male who developed confluent and reticulated papillomatosis (CRP). The patient was found to be slightly obese and had no family history of such eruption. Numerous small red-brown erythemas were scattered over a wide area of the back and, in many areas, the erythemas coalesced and formed a reticular pattern. The eruptions appeared 10 days prior to the initial visit to our outpatient clinic. The Parker-KOH preparation of scraped scales revealed numerous round and budding non-clustering cells and no mycelial elements. Histological examination showed subtle papillomatosis and sparse perivascular lymphohistiocytic infiltrations. Periodic acid schiff stain showed a few spores in the stratum corneum. Topical application of 2% ketoconazole cream produced complete resolution of the eruption in 7 days.

The course and histological findings of our patient suggest the eruptions were developing CRP lesions. Application of topical antifungal agents appears to be a beneficial initial treatment for early CRP lesions.

Key words: confluent and reticulated papillomatosis, Malassezia furfur, topical antifungal therapy

INTRODUCTION

Confluent and reticulated papillomatosis (CRP) is a distinct condition first described by Gougerot and Carteaud in 19271. Several causal factors have been postulated in the literature including endocrine disturbance2 and an abnormal response to the yeast Malassezia3. As the etiology of CRP remains unknown, various therapeutic modalities have been reported.

CASE REPORT

A 43-year-old Japanese male presented with eruptions on the back. The eruptions had developed 3-4 years earlier. The condition was exacerbated in summer, but cleared completely and spontaneously in winter. The patient had not previously sought medical treatment. The eruptions had reappeared 10 days before visiting our hospital. Upon initial examination, he was found to be slightly obese (height, 168 cm; weight, 75 kg) and he had no family history of such eruption.

Numerous small red-brown erythemas were scattered over a wide area of the back. In many areas, erythemas coalesced and formed a reticular pattern (Fig. 1). The Parker-KOH-mounted examination revealed that the scales scraped from the erythemas had numerous round and budding non-clustering cells and no mycelial elements. Histological examination showed subtle papillomatosis and sparse perivascular lymphohistiocytic infiltrations. Periodic acid schiff stain showed a few spores in the stratum corneum. Topical application of 2% ketoconazole cream produced complete resolution of the eruption in 7 days.

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DISCUSSION

Despite its clinically distinct appearance, CRP reveals only nonspecific papillomatosis and hyperkeratosis. As for the demographics of this disorder, a mean age at onset of 21 years and 19 years, and a female : male ratio of 2.5 : 1 have been reported. In addition, a considerable proportion of CRP patients are obese, with or without endocrine disturbance. The eruptions of CRP are typically small hyperkeratotic erythematous papules that coalesce to form reticular patterns that are predominantly localized at the mid-trunk. Diagnosis can be made from the distribution and pattern of the eruption. Lee et al. defined CRP according to the following features: (1) hyperpigmented papules and plaques at least the central portion of the chest or back with confluence centrally and reticulation at the periphery, (2) no demonstrable hyphae on either KOH preparation or histological testing, and (3) papillomatosis, hyperkeratosis and acanthosis often with hypogranulosis and a sparse superficial perivascular lymphocytic infiltrate histopathologically.

Differential diagnosis of CRP must account for prurigo pigmentosa, benign acanthosis nigricans, pseudoacanthosis nigricans, and tinea versicolor (TV). Prurigo pigmentosa is morphologically similar to CRP, having reticulated hyperpigmented papules and plaques involving the central portion of the chest and/or back. Prurigo pigmentosa can be differentially diagnosed by histologic findings and severe pruritus. The clinical manifestation of velvety hyperpigmented papules and plaques in a confluent pattern may also mimic benign acanthosis nigricans and pseudoacanthosis nigricans. The lack of involvement of typically localized areas, such as the posterior neck, axillae, and inguinal space, distinguish CRP from benign acanthosis nigricans and pseudoacanthosis nigricans.

Aggravation of the present patient’s lesions in the summer and his quick response to the topical application of antifungal cream are disease characteristics shared by TV and CRP. We were able to make a final diagnosis of CRP because the response to antifungal cream was somewhat quicker.
than that expected in cases of TV, and no mycelial elements or numerous round and budding non-clustering cells were found on Parker-KOH mounting in our patient. Clusters of round and budding cells and angular fragments of mycelial elements in the scales are consistent findings of TV. Typically both spores and mycelial elements are found in PAS stain of the biopsy specimen taken from TV lesions. On the other hand, PAS stain showed only a small number of spores in the case described. Roberts and Lachapelle\(^3\) and Yesudian et al.\(^5\) reported CRP cases in which PAS stains showed a small number of spores. The results of PAS stains are not always correlated with the findings of KOH direct examination in CRP. The number of spores may be decreased during the tissue processing.

In the present case, the distribution and pattern of eruption was consistent with CRP. However, the majority of the eruptions were light brown erythema, and papillomatosis was only subtle on microscopic examination. Gougerot and Carteaud\(^1\) documented the initial eruption of CRP to comprise flat, slightly upheaving, rosy papules, 2 to 4 mm in diameter, that progressed to brownish verrucous papules with a rough surface that resembled verruca plana juvenilis. We speculated that the papules with a rough surface seen in the present patient may correspond to the histological features of papillomatosis. Because the individual eruption had developed only 10 days earlier in this case, the eruption might have not been fully developed.

The precise etiology of CRP is still unknown. Endocrine disturbance, hereditary disorder, abnormal host response to Malassezia species\(^3\), a variant of amyloidosis\(^6\), and keratinization defect\(^7\) have all been proposed as possible etiological factors. Accordingly, various therapeutic modalities have been applied to CRP depending on the etiological hypothesis favored. Isotretinoin\(^4,8\), minocycline\(^9\), calcipotriol\(^10\), and weight reduction\(^11\) have recently been reported to effectively treat CRP. Among these, minocycline has become the most widely applied, attributable mainly to its effectiveness and safety. However, none of the existing treatments have been uniformly effective.

The clinical resemblance and even coincidence between CRP and TV has led several authors\(^3,5\) to propose that the Malassezia species may play a role in the development of CRP lesions. Topical and systemic antifungal therapies including selenium sulfide\(^12\), miconazole\(^13,14\), tolnaftate\(^15\), and itraconazole\(^16\) have produced positive outcomes, but even in those cases in which treatment was effective, the response was limited and there was a high recurrence rate. Moreover, in the majority of the cases, antifungals did not offer any benefits. Nordby\(^12\) reviewed the treatment of reported CRP cases with antifungals and concluded there was in fact no correlation between the KOH findings and therapeutic response. Although recent findings do not support the Malassezia theory, in a small number of the cases\(^3,5,14\) antifungal application completely eliminates CRP lesions as it did in the present case. The course and histological findings of our patient suggest the eruptions were developing CRP lesions, and we felt it prudent to start topical antifungal therapy, because not only it is safe but it also has only limited effects.

We conclude that application of topical antifungal agents is appropriate as an initial treatment of early lesions of CRP and that it is, at the present time, the most effective treatment for this condition. Physicians should consider use of these agents in planning treatment planning for CRP.

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