# Superficial basal cell carcinoma on face treated with 5% imiquimod cream

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## ABSTRACT

Imiquimod, an immune response modifier, is known to possess both anti-viral and anti-tumor effect. We report our experience of treating a large superficial spreading basal cell carcinoma with 5% imiquimod cream. A 65-year-old male had an asymptomatic, hyperpigmented, slowly progressive, indurated, 3 x 4 cm plaque on the left cheek for two months. Biopsy from the lesion showed features of basal cell carcinoma. The patient was treated with imiquimod 5% cream, topically three times a week for six months with complete resolution of the lesion and without any side-effects. There was no clinical or histological recurrence after three months of stopping the treatment.

**Key Words:** Basal cell carcinoma, Imiquimod, Treatment

## INTRODUCTION

Basal cell carcinoma (BCC) is the most common malignant tumor of the skin.[1] The nodular or nodulo-ulcerative and superficial types comprise nearly 80% of all BCCs and are less aggressive.[1] The aim of the treatment in BCC is to achieve histologically confirmed cure. For large lesions at critical sites such as the face, where tissue conservation is important, Moh's micrographic surgery is ideal, but the technique is not readily available. Surgical excision of a large lesion with 2-4 mm free margin may leave an aesthetically unpleasant scar.

Topical imiquimod, an immune response modifier has been found to be effective in superficial and nodular subtypes of BCC with clearance rates of up to 100%.[2-4] Successful treatment of a large superficial spreading BCC on the face with 5% imiquimod cream is reported here. To our knowledge, it is the first report of use of imiquimod in basal cell carcinoma from India.

## CASE REPORT

A 65-year-old male presented with a single asymptomatic, hyperpigmented plaque on the left cheek since two months. The lesion started as a small plaque and gradually increased in size. There was no history of exposure to radiation other than routine sun-exposure. There were no systemic symptoms. The past and the personal history were noncontributory. Cutaneous examination showed an erythematous, indurated, irregular plaque of size 3 x 4 cm with raised pigmented margins [Figure 1]. There was a small area of atrophy and depigmentation within the plaque near the edge. There was no ulceration or regional

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lymphadenopathy. Systemic examination did not reveal any abnormality. A clinical diagnosis of superficial spreading basal cell carcinoma was made and a biopsy from the edge of the plaque showed multiple nests of basaloid cells with peripheral palisading in the papillary dermis in continuity with the overlying epithelium [Figure 2].

The patient was treated with 5% imiquimod cream applied three times a week on alternate days. After three applications there was intense erythema followed a week later by scaling. The patient had no discomfort and the treatment was continued further. After 12 weeks (36 applications) there was near-complete resolution of erythema, pigmentation and raised margins. The plaque was replaced with a mildly atrophic scar merging with the surrounding normal-looking skin [Figure 3]. The treatment was continued for another three months. A biopsy done three months after discontinuation of the treatment showed disappearance of basaloid cells with only pigment incontinence and fibrosis in the superficial dermis [Figure 4]. There was no evidence of residual tumor on multiple sections.

## DISCUSSION

Imiquimod, an imidazoquinolone amine, has both anti-viral and anti-tumor activity. It enhances both innate and acquired immunity.[5] It has been approved for the treatment of anogenital warts and actinic keratosis by US FDA.[5,6] It has been effectively used

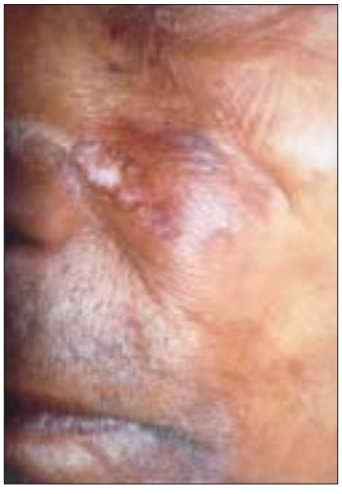

**Figure 1: Pretreatment photograph**

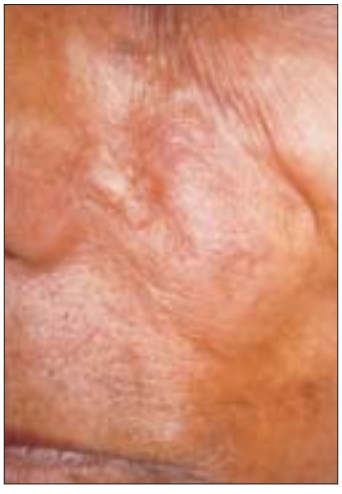

**Figure 3: Posttreatment photograph**

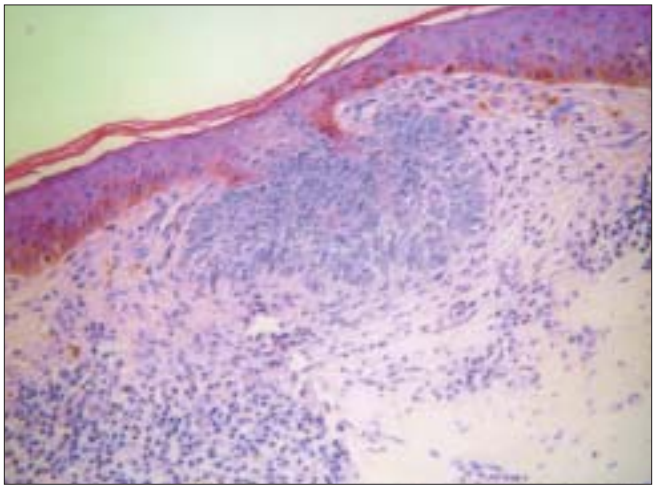

**Figure 2: Pretreatment photomicrograph showing a nest of basaloid cells with peripheral palisading in the dermis (H and E, 400x)**

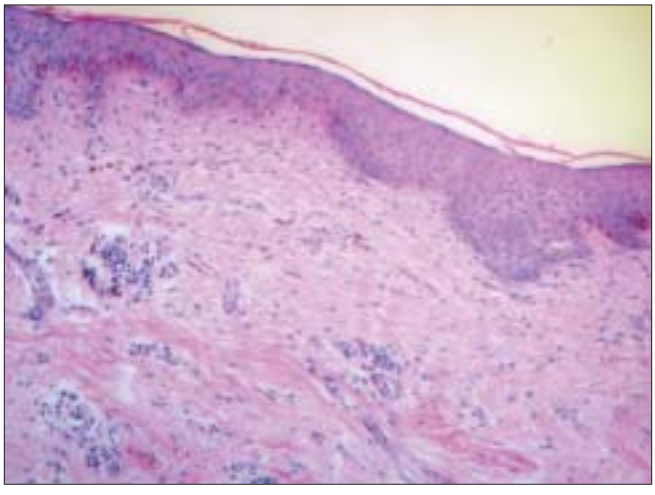

**Figure 4: Posttreatment photomicrograph 3 months after discontinuation of the treatment showing disappearance of basaloid cells (H and E, 400x)**

for nongenital warts, molluscum contagiosum, basal cell carcinoma, squamous cell carcinoma in situ, malignant melanoma, keratoacanthoma, prevention of keloids after surgery, cutaneous T-cell lymphoma, cutaneous extramammary Paget's disease and morphea.[5-7] In some case studies it has been shown to be effective even in infantile hemangiomas, porokeratosis of Mibelli, cutaneous leishmaniasis, tattoo removal and eccrine poroma.[8,9]

The precise mechanism of the anti-tumor effect of imiquimod in BCC is not known. It has been postulated that ultraviolet radiation induces mutations in the tumor-suppressor genes and alters the immuno-surveillance, so that tumor cells escape from cytotoxic T cells and apoptosis.[1] Th-2 cytokines, that downregulate tumor surveillance, are raised in BCC.[1,5] Imiquimod acts on toll-like receptor-7 (TLR-7) present on dendritic cells, macrophages and monocytes and induces expression of interferons, Th-1 cytokines (IL-1, IL-6, IL-10 and IL-12), tumor necrosis factor-α and G-CSF, thereby counteracting Th2 cytokines and promoting tumor surveillance.[1,5] It also enhances the activity of natural killer cells and epidermal Langerhans' cells. The tumor regression is achieved probably by induction of Fas receptors on the tumor cells resulting in their apoptosis.[10]

Imiquimod as a monotherapy has shown unequivocal cure rates ranging from 60-100% with twice-daily, once-daily and thrice-weekly regimens for both superficial and nodular BCC.[4] The cure rate approaches 100% as the frequency of daily applications is increased.[2-4] In our case we preferred to start the therapy with low-frequency applications due to the uncertainty about the local and systemic side-effects in Indian patients. Although imiquimod therapy is considered safe, both local and systemic side-effects have been reported.[2-4] Local side-effects include erythema, itching, pain, vesiculation, ulceration and hypopigmentation, which occur more frequently with twice-daily applications. Systemic side-effects are usually mild, which include headache, fever, malaise, arthralgia, nausea and diarrhea. Our patient developed only erythema, probably due to cytokine induction.

It is also easy to monitor the response to therapy clinically, since with imiquimod, histological cure has been found in all cases where the clinical cure was considered.[4] In addition, histological cure was confirmed in up to one-third of cases when clinically the cure was still in doubt.[4] Moreover, imiquimod therapy leaves behind excellent healed site aesthetically, as seen in our case.

We therefore conclude that imiquimod may be used as a noninvasive, patient-administered, topically effective medical therapy for the management of commonly encountered less aggressive forms of large BCCs, especially in a setting where surgical approach is not amenable. However, long-term follow-up of a larger number of cases is needed to establish its role in the management of such patients.

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