

**BASAL CELL CARCINOMA ARISING IN A SCAR OF CUTANEOUS LEISHMANIASIS****\*Abdullah Mancy [FICMS (D&V)] and Khalid M. Awad [FICMS (D&V)]**

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**ABSTRACT**

Basal cell carcinoma is the most common malignant tumor in humans and mostly occur in elderly people, the pathogenesis of basal cell carcinoma is directly related to exposure to ultraviolet radiation in sunlight, there are multiple risk factors lead to induction of it, sometimes these factors present in the same patient, here we report such patient in whom multiple factors resulted in inducing the tumor, these include, the nose which is most common site affected by basal cell carcinoma, scar at this site, trauma and possibility of platelet- rich plasma which has been injected into the scar to rejuvenate it.

**KEYWORDS:** Basal cell carcinoma, Scar, Platelet-rich plasma.**INTRODUCTION**

Basal cell carcinoma (BCC) is the most common cancer in humans, epidemiological data indicate that the overall incidence is increasing worldwide significantly by 3%–10% per year, BCC is more common in elderly individuals but is becoming increasingly frequent in people younger than 50 years of age.<sup>[1]</sup>

Risk factors for BCC have been well characterized which include, intermittent intense sun exposure, radiation therapy, a positive family history of BCC, immunosuppression, a fair complexion, especially red hair, easy sun- burning skin (types I or II), blistering sunburns in childhood, indoor tanning which is a strong risk factor for early-onset BCC, particularly among women, exposure to arsenic, scars and hereditary disorders such as nevoid basal cell carcinoma syndrome (Gorlin–Goltz syndrome) and xeroderma pigmentosum.<sup>[2,3]</sup>

The pathogenesis of BCC involves exposure to ultraviolet radiation (UVR), particularly the ultraviolet - B spectrum (290–320 nm) that induces mutations in tumor suppressor genes, UV-induced mutations in the p53 tumor suppressor gene have been found in about 50% of BCC cases.<sup>[1,4]</sup>

The site of predilection is the chronically sun-exposed skin of the head and neck region, the typical BCC is a pearly pink or flesh colored papule with telangiectasia, lesion may be translucent or slightly erythematous with a rolled border, occasionally accompanied by bleeding, scaling or crusting, the most

common form of BCC is nodular, followed by superficial, then morpheiform.<sup>[1,3,5]</sup>

Histopathological features vary somewhat with subtype, but most BCCs share some common histological characteristics, the malignant basal cells have large nuclei and relatively little cytoplasm, although the nuclei are large, they may not appear atypical, usually, mitotic figures are absent, frequently, slit-like retraction of stroma from tumor islands is present, creating peritumoral lacunae that are helpful in the diagnosis.<sup>[1]</sup>

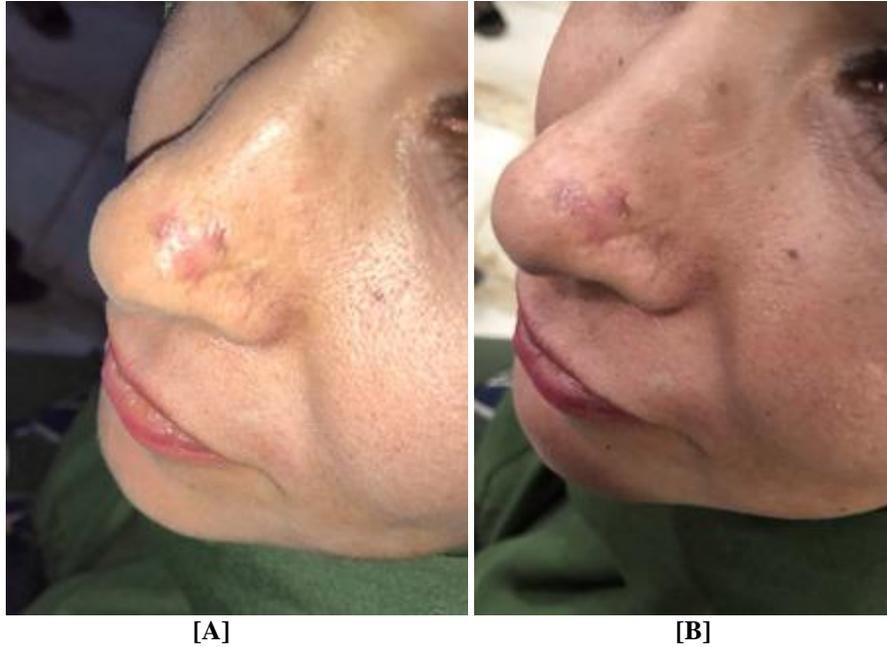
Management of BCC is guided by anatomic location and histological features, standard therapy is complete surgical removal, radiation therapy is an option for inoperable tumors or those where the post-operative defect would be cosmetically disfiguring or functionally disabling, liquid nitrogen cryotherapy, ablative laser therapy, topical medical therapy as 5-fluorouracil and imiquimod and Photodynamic therapy, in recent years new therapeutic approaches have been developed both for locally advanced or metastatic disease, these include hedgehog pathway inhibitors, vismodegib and sonidegib.<sup>[3,4,6]</sup>

**CASE REPORT**

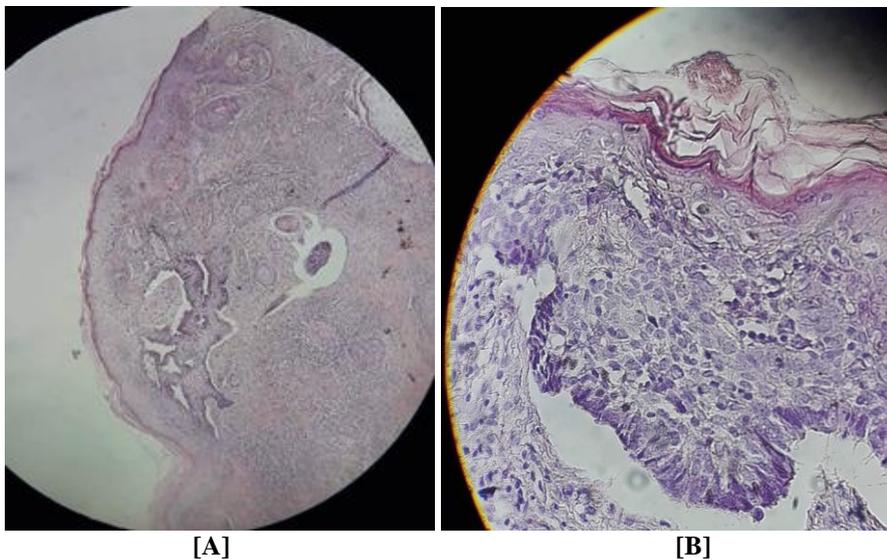
Thirty-eight years old woman presented to our office complaining of the appearance of slightly scaly papules at the border of previous Leishmaniasis scar at the lateral and upper part of the left side of the nose which was present since childhood “Fig.1”, the patient was noticed these papules mostly after a sessions of platelet-rich plasma (PRP), for two session, one month apart, which

has been injected into the scar to rejuvenate it. On examination, a scar was presented on the left side of the nose with a scaly papules present on its border that was clinically suspicious for BCC., one papules was removed by punch biopsy and sent for histopathological analysis

and was revealed to be BCC. "Fig.2" Others investigations such as complete blood count, liver function, renal function and blood biochemistry tests was normal. The patient was referred to a plastic surgeon.



**Figure 1[A&B]:** Thirty-eight years old woman with Leishmaniasis scar at the lateral and upper part of the left side of the nose associated with scaly papules at its border.



**Figure 2[A&B]:** BCC are characterized by basophilic cells with peripheral palisading of the nuclei in association with stromal retraction, in a low [AX10] and high [B X40] power.

## DISCUSSION

Basal cell carcinoma is primarily seen on the head and face, with approximately 70 percent seen on the nose (nose tip and alae), only 25 percent of BCCs are seen on the trunk, and five percent are seen on the penis, vulva, or perianal skin, most BCCs therefore occur on sun-exposed areas of very fair individuals, environmental factors can play a role, particularly in BCCs in non-exposed areas, such factors include exposure to coal,

arsenic, paraffin, tar, certain industrial oils, radiation, burns and their complications, and genetic factors.<sup>[7]</sup>

So excessive UVR exposure is the primary predisposing factor for BCC, however, surprisingly, BCCs occur very rarely on the dorsal hand, which is subject to intense sun exposure, and their infrequent presentation in this location suggests that other factors besides UVR may play a role in BCC development.<sup>[8]</sup> Therefore in the

patient presented, she was an outdoor worker, the sun exposure was an important factor in induction of the tumor in addition to other factors.

The pathogenesis of BCC is directly related to exposure to ultraviolet radiation in sunlight, but trauma is also mentioned occasionally, in a study that assess the relationship between the development of BCC and trauma, in about 13% there was a history of previous injury, these lesions either developed directly after a sharp or blunt injury or in the scar tissue that had resulted from previous surgical incisions, burns, or dog bites.<sup>[9]</sup>

In large retrospective reviews shown that malignant degeneration of wounds or scars while unusual, is not rare, squamous cell carcinoma (SCC) is the most common tumor, and it may occur up to 20–40 years after the initial injury, BCCs have been reported to arise from various sites of wounds and trauma, including chronic stasis ulcer, varicella scar, tattoos, dog bite, hair transplantation sites, vaccination sites, colostomy sites, and electrical burns, the mechanism of this malignant degeneration is unclear, but several explanations could be found such as atrophy and decreased vascularity in scar tissue adnexa and surrounding epidermis may make the tissue more sensitive to the effects of sunlight, also chronic irritation of the damaged cutaneous tissues may lead to malignant degeneration.<sup>[10]</sup> So the presence of the leishmaniasis scar on the nose for a long period in addition to trauma to the scar induced by injection of PRP in attempt to rejuvenate the scar tissue may be another factors that enhance development of the tumor.

Several cell types have been suggested to be the precursor cells or stem cells for BCC, interfollicular basal keratinocytes, basal keratinocytes from hair follicles or sebaceous gland cells, in general, stem cells have a relatively undifferentiated and slow-cycling phenotype, but can be stimulated to proliferate and give rise to transient amplifying cells which have a limited proliferative potential, stem cells may be the target of carcinogens and as such play an important role in tumor genesis.<sup>[4]</sup> The positive effects of PRP in favoring angiogenesis processes and proliferation of undifferentiated stem cells have been demonstrated experimentally. To date, the reports about the specific role of PRP are anecdotal and few, mostly, only limited case studies or series.<sup>[11]</sup>

## CONCLUSION

In conclusion, there are more than one risk factor predispose this patient to have BCC, first the site, nose which is the mostly affected site, secondly the scar of the same site, in addition to trauma and possibly PRP injected to that site.

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