

Case report

Squamous cell carcinoma in a foundry worker — is it an occupational hazard?

S Satgurunathan¹

Sri Lanka Journal of Dermatology, 1995, 1, 20

Abstract

Squamous cell carcinoma is reported in a 64 years old foundry worker on both legs without metastases after 2 years of follow up. He has been exposed to the temperature of 2500 F over 50 years. This condition has not been documented previously in Sri Lanka.

Introduction

Sun light is the main factor in the aetiology of skin cancers, but there are environmental factors, carcinogens contribute to their development.

Chimney sweepers, mule spinners, capstan lathe operators are some of the well documented occupations which may predisposed to squamous cell carcinoma because of the contact with carcinogens on the skin surface³. Kligman described the infrared radiation in the aetiology of skin malignancy². Cross reported over 160 cases of squamous cell carcinoma of the legs in rural Irish women who spent hours in front of open hearths containing burning peat¹. Kangri cancers of Kashmir arise from holding earthenware pot containing burning coal against the skin³. Kang cancers are seen in China in people who sleep on a heated brick. These are some of the well documented heat induced skin cancers³.

Case report

A 64 years old male, a foundry worker presented with warty plaques on both his shins. He had these lesions for 2 months. It started as erythematous, pigmented plaques which later became warty. It was neither itching nor painful.

He had been working in a foundry for 50 years and exposed to a temperature of 2500 F, 2-3 hours a week from a distance of 6 feet without adequate safety measures.

He does not smoke or take alcohol. He is not on any medications. On examination he was not pale, not icteric and there was no palpable lymph nodes.

Cardiovascular, respiratory systems and the abdomen were clinically normal.

Examination of the skin showed erythematous, scaly, warty lesions symmetrically involving his shin. There is no tenderness.

Investigations: Hb 13.8%, White count 9800, Blood urea 28 mg, liver function tests were within normal limits, Chest X-ray was normal.

Histopathology showed invasion of epidermal cells into the dermis with atypical squamous cells. Horn pearls were present in fairly large numbers, changes compatible with a squamous cell carcinoma.

Discussion

Infra red radiation denature DNA and coagulate proteins⁴. A single exposure of infra red radiation of subthreshold intensity causes mild erythema. Reticulate erythema develops with repeated exposure and leads to a well known entity called Erythema ab igne. This may later develop into squamous cell carcinoma. Thermal induced squamous cell carcinomas have long latent periods of over 30 years of chronic exposure⁴ like in this patient who had 50 years of exposure to heat.

References

1. Cross F. On a turf (Peat) fire cancer: malignant change superimposed on erythema ab igne. *Proc R. Soc. Med.* 1967; 60: 1307-8.
2. Kligman AM. Early destructive effect of sunlight on human skin. *J. Am. Med. Assoc.* 1960; 210: 2377-80.
3. Rook Wilkinson Text Book of Dermatology, Vol. 2, Fifth Edition 1497-1502.
4. Elizabeth Heller Page. Temperature dependant skin disorders. *J. Am. Med. Assoc.* 1988; 18: 1003-1016.

¹ Consultant Dermatologist, General Hospital, Ratnapura.