A case of squamous cell carcinoma of the skin subsequent to a subcutaneous foreign body

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INTRODUCTION

Squamous cell and basal cell carcinomas are the most important non melanoma skin cancers and exposure to ultraviolet radiation is the most important risk factor for their development besides other risk factors including foreign body 1-4. In Kashmir, due to continuous exposure to Kangri, a fire pot used for warming during the winter, a specific type of NMSC called Kangri cancer develops usually on thighs after passing through the stages of erythema ab igne and Bowen’s disease 5. We report a case of SCC on the inner thigh in an elderly Kashmiri female which was probably developed subsequent to a subcutaneous non-metallic foreign body.

CASE REPORT

A 65-year-old non diabetic, hypertensive woman from Kashmir presented with a small, single, dry, rough, asymptomatic skin lesion on the left inner thigh since 5 years ago. The lesion was preceded, one month earlier, by a trivial trauma caused by the penetration of the dry piece of a broom. Like all Kashmiri population, she had the habit of using Kangri for warming for years. The skin lesion progressed very gradually over the years and, being asymptomatic, was unattended. In the last one month, the lesion suddenly increased in size, became painful and started oozing. She was prescribed some oral and topical antibiotics by a general practitioner, but the lesion continued its aggressive course until she consulted us. She had a past history of hypertension for 15 years and was on regular medication. There was no other significant family or drug history. General physical and systemic examination was normal. Dermatological examination revealed a single well-defined fungating exophytic growth, with crusting and sero-hemorrhagic exudation, on the inner thigh of left side, measuring about 7 cm in size.

Squamous cell carcinoma (SCC) of the skin is one of the most common non melanoma skin cancers (NMSC), along with basal cell carcinoma (BCC). Besides ultraviolet radiation, exposure to industrial agents, ionizing radiation, and areas of chronic inflammation are associated with the development of SCC. Squamous cell carcinoma may also be associated with foreign bodies. We report a rare case of cutaneous SCC in an elderly Kashmiri female, which was developed subsequent to a subcutaneous non metallic foreign body and was successfully excised with negative margins and transposition flap closure.

Keywords: foreign body, Kangri cancer, squamous cell carcinoma, transposition flap closure

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cm×6 cm. It was firm, non-tender, and contained friable tissue with an indurated base (Figure 1). The skin on both inner thighs showed reticulate pigmentation (erythema ab igne). There was no significant lymphadenopathy in the inguinal or other areas. The routine investigations including complete hemogram, liver and kidney function tests, chest X-ray, and abdominal and pelvic ultrasound revealed no abnormality. With a clinical impression of squamous cell carcinoma, the patient was scheduled for wide surgical excision. The lesion was completely excised along with 1 centimeter margins, which was sent for histopathological examination (HPE). During excision, the subcutaneous tissue in the centre of the mass contained a foreign body, a small piece of a broom (Figure 2). The wound was closed with the transposition flap technique (Figure 3). HPE under hematoxylin & eosin stain showed a thin epidermis with keratinized squamous tumour cells infiltrating the whole dermis, confirming the diagnosis of SCC (Figure 4).

DISCUSSION

Besides exposure to ultraviolet radiation, other risk factors for NMSC include industrial exposure to oils and tar, chronic ulcers, draining osteomyelitis, burn scars (Marjolin ulcer), ionizing radiation, chronic irritation, sites of previous trauma, chronic inflammation, non-healing wounds, and also foreign bodies.

The etiopathogenesis of a cancer can be attributed to the above-mentioned risk factors through many mechanisms such as spontaneous errors in DNA replication, inflammatory or cytotoxic carcinogenic materials, materials that directly injure DNA, radiation exposure, and viral oncogenesis. Foreign body carcinogenesis in humans appears to be related to the consequent chronic inflammation. Chronic inflammation causes an increased rate of cell turnover which is expected to increase the risk for spontaneous replication errors in DNA during cell division although other mechanisms may play a role in foreign body-induced tumor, as well. Inflammatory mediators released by inflammatory cells at the inflammatory foci like tumor necrosis factor-alpha (TNF-α), interleukin-1β, matrix metalloproteins-9 (MMP-9), and

Figure 1. Friable exophytic lesion of clinically suspected squamous cell carcinoma, with surrounding erythema ab igne.

Figure 2. Non metallic foreign body, impacted in subcutaneous tissue in the centre of the growth.
vascular endothelial growth factor (VEGF) have been implicated to act as promoters, in addition to the release of oxygen and nitrogen oxide free radicals from leukocytes which exhibit cytotoxic and mutagenic effects 8-10.

Development of foreign body carcinogenesis is rarer in humans and has been well studied in animal models 1,11,12. In Kashmir, Kangri cancer is a well known entity which develops on the inner thighs after chronic use of Kangri 5. Our patient also developed SCC at the classical site of Kangri cancer, but also had a subcutaneous non metallic foreign body, probably augmenting the development of SCC.

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REFERENCES


