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RESEARCH ARTICLE

BOWEN'S DISEASE IN RIGHT THUMB

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ABSTRACT

Bowen's disease is a clinical expression of squamous cell carcinoma in situ of the skin which presents as an asymptomatic well defined erythematous scaly plaque. (Weedon's skin pathology, 2010) There is a predilection for both sun exposed areas like head and neck and non sun exposed areas like genitalia of both sexes, occurring in elderly people. A case of Bowen's disease occurring over the right thumb, in a middle aged woman, who is a beedi maker, is being presented.

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INTRODUCTION

There are three types of clinical presentation of in situ carcinoma of skin namely Bowen's disease, Bowenoid papulosis and Erythroplasia of Queret which can occur both in genital region and extragenital region; however 10% of Bowen's disease is associated with internal malignancy. The best established form of squamous cell carcinoma in situ of the skin is Bowen's disease (Sternberg's diagnostic surgical pathology 6th editon) which was first described by John Bowen in 1912 (Singh *et al*., 2013). He described the lesions both in the sun exposed and non sun exposed areas of the skin like external genitals. Sun exposed lesions are due to UV radiation as well as arsenic poisoning and the lesions in non sun exposed areas are due to HPV infection particularly HPV-16.The diagnosis of Bowen disease is a clinicopathological one (Rosai, 2011) which can be triggered by several factors. When it is due to UV exposure, it has been called Bowenoid actinic keratosis. Lesions uncommonly become invasive, but once it becomes invasive they have high metastatic rate that varies from 13% to 37%. In fact they can also spontaneously regress or respond to conservative therapies (Sternberg's diagnostic surgical pathology 6th editon).

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Case report

A 30 years old married female, beedi maker, presented with slowly a progressive erythematous, firm cystic swelling of size 0.5 x 0.5 cm with a smooth surface with irregular border, over the distal phalanx of the right thumb over a period of several months. There was no itching, induration or discharge from the lesion. Excision biopsy was done and subjected to histological examination. Gross examination showed partially skin covered globular soft tissue piece measuring 1cm x 1cm x 0.5 cm. Microscopic examination revealed skin biopsy up to mid-dermal level with hyperkeratosis and focal parakeratosis and there was widening of rete ridges. There was focal expansion of epidermis where circumscribed nodules of squamous cells present. These squamous cells exhibit varying degrees of dysplastic changes. Mononuclear giant cells and few multinucleated giant cells were present. Both unipolar and multipolar mitotic figures were also noted. The histological pattern was consistent with the diagnosis of Bowen's disease. (Fig 1-5)

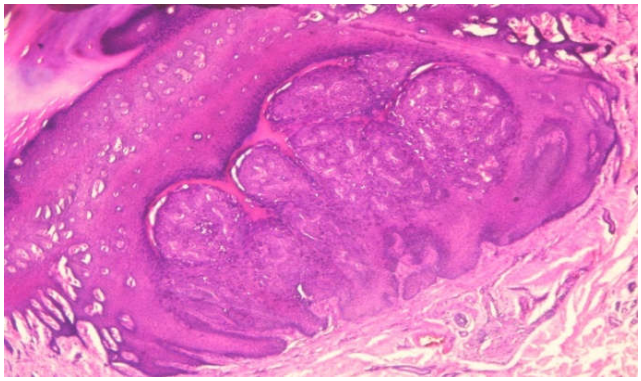

Figure 1. Bowen's Disease: Marked Hyperkeratosis, widening of rete ridges, which contain tumour cells in nodules

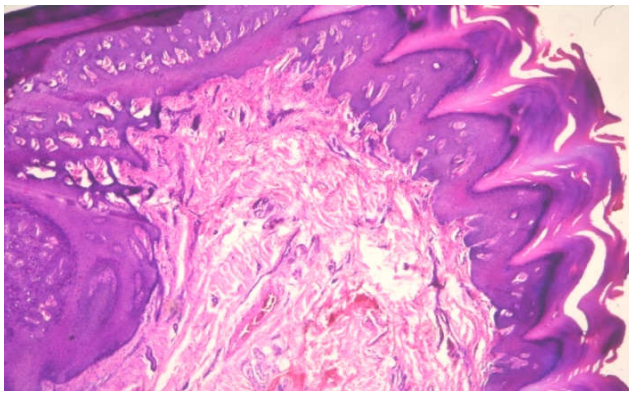

Figure 2. Bowen Disease: Adjacent area of lesion. Marked hyperkeratosis, acanthosis

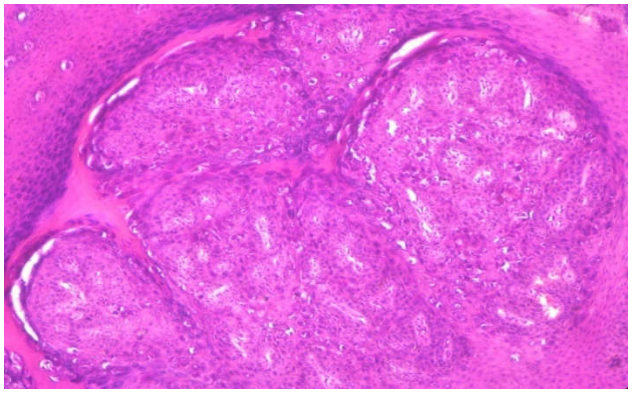

Figure 3. Bowen Disease: Nodules of squamous cells present

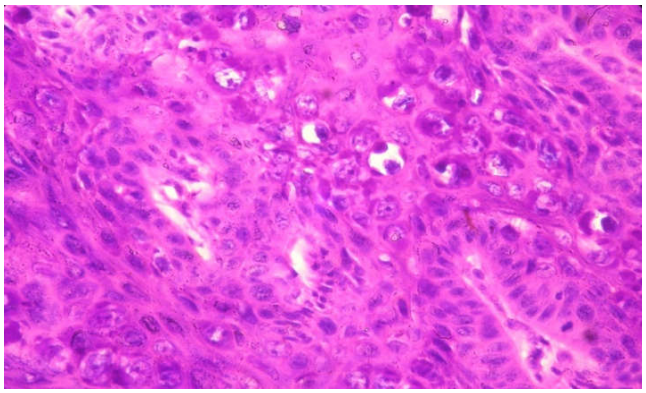

Figure 4. Bowen Disease: Keratohyaline granules

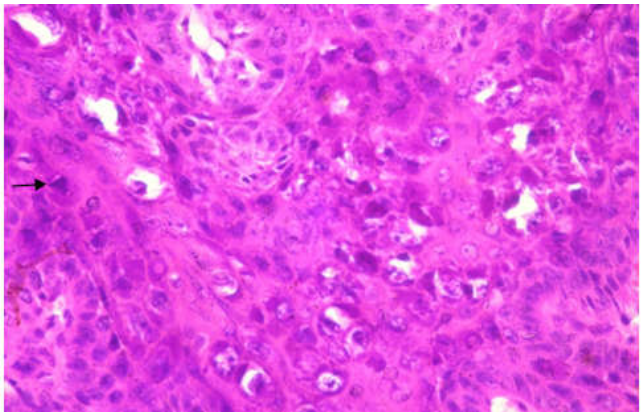

Figure 5: keratohyaline granules, tumour giant cells, abnormal mitotic figures Arrow indicates mitotic figure

DISCUSSION

Carcinoma- in- situ or intraepithelial carcinoma has been described in the various epithelia and it is encountered most often in the stratified squamous epithelium of the skin, mouth and cervix .Some clinical examples are Bowen's disease of the skin, Actinic keratosis, Erythroplasia of Queyrat and leukoplakia with dysplasia (Walter and Israel, 2011). Bowen's disease is a rare premalignant progressive intra epidermal carcinoma affecting skin and or mucous membrane with potential to progress to squamous cell carcinoma (Singh *et al*., 2013). The incidence is around 1.42 per 1000 population (Neubert and Lehmann, 2008). This occurs in middle aged and elderly (Walter and Israel, 2011). These lesions can occur anywhere on the skin surface or on mucosal surfaces, including the genitalia of both men and women, but are more frequently found on the lower legs of elderly women (Robbins and Cotran 2014; Rook's, 2010). Multiple lesions are seen in 10-20% of cases with history of arsenic exposure (Gahalaut *et al*., 2012). The present case is a peculiar one for several reasons, probably this is the first time Bowen's disease in thumb being reported in recent times. The patient is a beedi maker by profession, where tobacco is one of the ingredients of the fillings of beedi. The nicotine in tobacco is a known carcinogen. Smokeless tobacco which is kept in mouth in combination with beetal nut with calcium carbonate which is called "Devil's Quid" predisposes to submucosal fibrosis, which is a premalignant lesion of invasive Squamous cell carcinoma of nasal mucosa and mouth. Two cases of Bowen's disease of hand had been found in literature, which occurred in index and ring finger (Singh *et al*., 2013; Firooz *et al*., 2007).

The clinical presentation of Bowen's disease is a slow growing, erythematous, well-demarcated plaque with a scaly or crusty surface that may be eroded or ulcerated (Kolm *et al*., 2004). In Bowen's disease, histopathological examination demonstrates, the epithethium is undergoing atypical proliferation and the orderly maturation of cells as they reach the surface is lost. The cells show dysplasia which vary in size and shape, have large, darkly staining nuclei and show mitotic activity. They have the microscopic changes usually associated with malignancy and since there is no invasion of the underlying connective tissue, the terms intraepithelial carcinoma or carcinoma-in-situ are used. Usually there is loss of granular layer with overlying parakeratosis and sometimes hyperkeratosis (Walter and Israel, 2011; Weedon's, 2010); several histological variants have been

described such as psoriasiform pattern, atrophic form, verrucous-hyperkeratotic type, papillated variant, irregular, pigmented, pagetoid type, clear cell change and the two rare histological variants are mucinous and squamous metaplasia. More than one of these patterns may be present in different areas of the same lesion (Weedon's, 2010).

Conclusion

Bowen's disease without a known conventional etiological agent like exposure to arsenic or UV radiation occurring in digit is very uncommon. More so Bowen's disease in hands involving fingers (Singh *et al*., 2013; Firooz *et al*., 2007). has been reported. However Bowen's disease occurring in right thumb, who is a beedi worker, who handles tobacco (but not consumed) developed Bowen's disease in the thumb of right hand, which is used to fill beedies with various ingredients, one of which is tobacco. Hence the documentation. Beedi resembles cigarette and is made of rolled Beedi leaves (Diospyros melanoxylon) which is filled with several substances as per the taste and custom ,but one of which is always tobacco; this is commonly smoked by people of both the sexes of low socioeconomic groups.

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