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Trichilemmal Carcinoma *in situ*

Sir,

The tumours are generally classified within three types: benign, pre-malignant (carcinoma *in situ*) and malignant. However, there is no definite entity for carcinoma *in situ* with outer-root sheath differentiation. The clinical entity of outer-root sheath differentiation includes trichilemmal keratosis, trichilemmoma and trichilemmal carcinoma (1). Trichilemmal keratosis is a benign keratinizing tumour which resembles a cutaneous horn or actinic keratosis (1). Trichilemmoma is also a benign neoplasm characterized by a lobular proliferation of glycogen-rich basaloid cells, whereas trichilemmal carcinoma is invasive carcinoma. The presence of carcinoma *in situ* with outer-root sheath differentiation, as in the present case, should be addressed.

Fig. 1. The lesion was 8 mm in diameter, keratotic and reddish-brown in nature, and characterized by an elevated and firm nodule; the clinical diagnosis was seborrheic keratosis.

CASE REPORT

A 48-year-old Japanese female presented with a 1-month history of a non-tender keratotic skin nodule on her right lower leg. The tumour was 8 mm in diameter, slightly elevated and reddish-brown in colour; the condition was clinically similar to seborrheic keratosis (Fig. 1). Pathological signs included marked hyperkeratosis, acanthosis, papillomatosis and vacuolated cells that were compatible with verruca vulgaris (Fig. 2a). An *in situ* hybridization of human papillomavirus (HPV), however, failed to detect any HPV DNA (type 6, 11, 16, 18, 31, 33, 51) in the lesion. Numerous mitoses, atypical cells and dyskeratotic cells were scattered throughout the epidermis; some of the tumour cells appear to be clear cells (Fig. 2b). A PAS stain demonstrated glycogen in the clear cells (Fig. 2c). Trichilemmal keratinization was also seen (Fig. 2d). The light microscopic findings supported the diagnosis of carcinoma *in situ* with outer-root sheath differentiation.

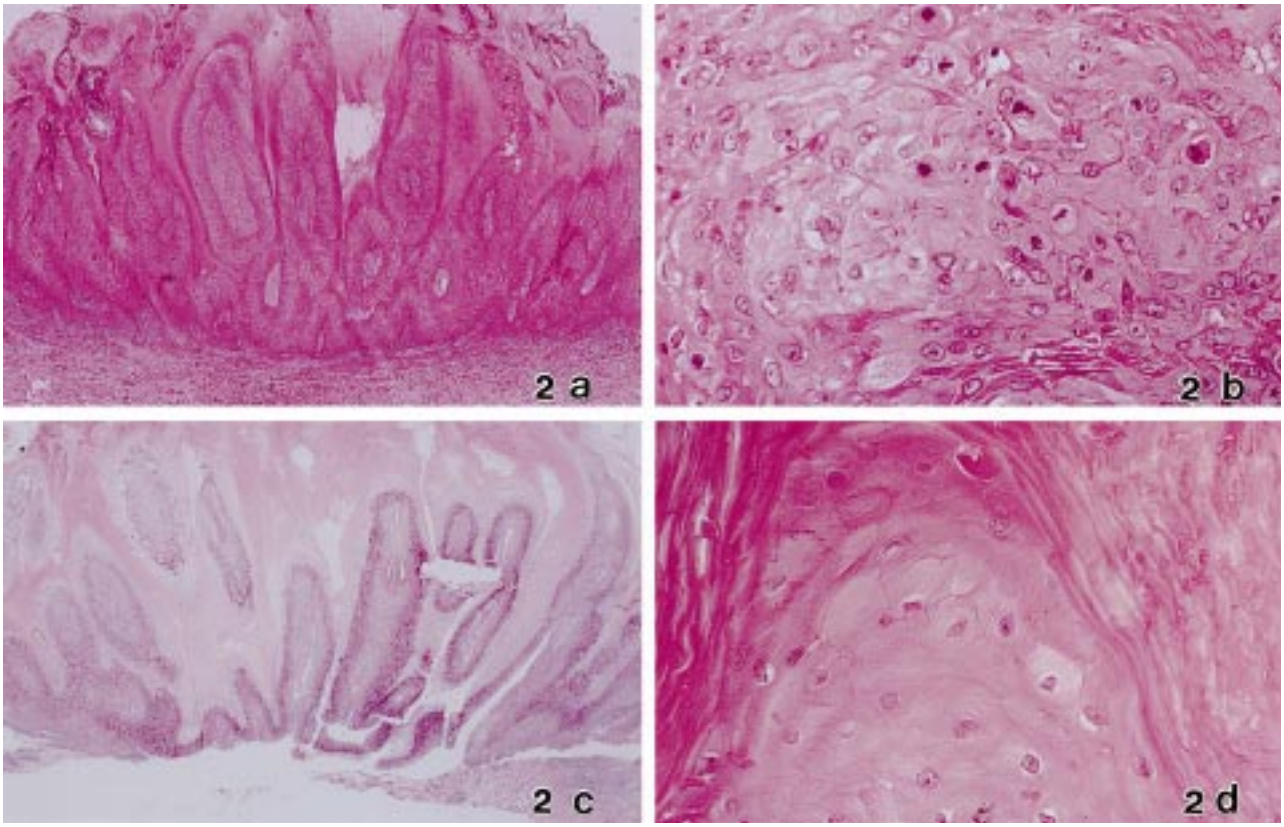

Fig. 2. (**a**) Marked hyperkeratosis, acanthosis and papillomatosis were noted, and the architecture was compatible with verruca vulgaris. (**b**) Numerous mitoses, atypical cells and dyskeratotic cells were scattered throughout the epidermis, and some of the tumour cells appear to be clear cells. (**c**) A PAS stain demonstrated glycogen in the clear cells. (**d**) Trichilemmal keratinization was noted.

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DISCUSSION

Nomenclature of the carcinoma *in situ* with outer-root sheath differentiation is characterized by tricholemmal keratinization and clear cells. There are several reports that are histologically compatible with this entity, including the keratotic variant of malignant tricholemmoma (2), carcinoma *in situ* variants trichilemmoma (3), malignant variant of trichilemmoma (4), trichilemmal carcinoma *in situ* (5). The presence of carcinoma *in situ* with outer-root sheath differentiation, as in the present case, should be addressed. We favour the diagnosis of trichilemmal carcinoma *in situ* when the histologically characteristic features of this unique skin tumour are present.

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