

# A red nodule of recent onset

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A woman has recently noticed an asymptomatic firm, red nodule in the mottled sun-damaged skin of her forearm. What is this lesion?

A 79-year-old woman with extensive mottled sun-damaged skin had a prior history of multiple skin cancers. She noticed the recent appearance of an asymptomatic firm, red nodule (measuring 0.8 cm in diameter) on her forearm (Figure 1). Excision biopsy showed a normal epidermis under which there were sheets of atypical large cells with focally vacuolated cytoplasm and increased mitoses (Figure 2). Some of the cells were multinucleated.

## Differential diagnosis

The list of differential diagnoses of a red nodule of short duration in chronic sun-damaged skin is long and includes a number of malignancies with similar histopathology.

- **Squamous cell carcinomas** may grow rapidly and appear as a red nodule. On skin biopsy, a poorly differentiated tumour may be hard to recognise, but usually the overlying epidermis is the primary source of the tumour and the atypical epithelium merges with the dermal nodule. Antibodies directed to a range of keratins seen in squamous cell carcinoma are helpful in identifying such tumours using the immunoperoxidase technique.
- **Malignant melanoma** may be amelanotic and appear as a red nodule. Melanomas may also have a similar histopathological pattern with nuclear pleomorphism and vacuolated cells. An intraepidermal

component can usually be identified and helps in the diagnosis. The immunoperoxidase method is extremely useful in identifying melanomas, which are usually positive for S-100 acidic protein as well as melanosome markers, HMB-45 and melan-A.

- **Atypical fibroxanthoma** is the correct diagnosis. These tumours typically develop in chronic sun-damaged skin, particularly on the head and neck. They may ulcerate. Atypical fibroxanthomas appear to be fibrohistiocytic tumours. The immunoperoxidase method defines such tumours through antibodies to intermediate filaments; atypical fibroxanthomas are positive for vimentin (mesenchymal marker) and procollagen I. Before the introduction of the immunoperoxidase method, distinguishing these tumours from squamous cell carcinoma or melanoma was often difficult.

Despite the marked cellular atypia, most atypical fibroxanthomas behave in a benign fashion if they are excised. They should be viewed as a malignancy because larger and deeper tumours merge with malignant fibrous histiocytomas that may metastasise.

## Keypoints

Although red nodules in sun-damaged skin may be benign, a skin biopsy is required in equivocal lesions to exclude a range of malignancies. These may share a pleomorphic histological pattern. The immunoperoxidase method can help to define the malignancy. **MT**



Figure 1. Red nodule on mottled sun damaged skin.

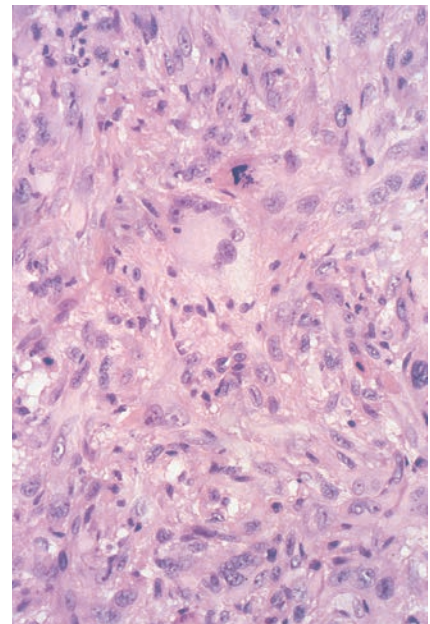


Figure 2. Skin biopsy showing sheets of cells including multinucleated giant cells, with pleomorphic nuclei, vacuolated cytoplasm and mitoses.

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