CASE REPORT

Primary cutaneous myxoid spindle cell squamous cell carcinoma: a rare skin cancer

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SUMMARY

A 72-year-old woman presented to the plastic surgery outpatient department with a nodular lesion to her shin. This nodule had increased in size, but was slow growing. The patient had a history of sun-damaged skin. On visual examination, the lesion was thought to be a naevus or basal cell carcinoma. The nodule was excised. Histologically, the lesion was classified as a primary cutaneous myxoid spindle cell squamous cell carcinoma. Currently, there is only one other paper that describes this rare skin cancer. As a result of the histological findings, the lesion margin was further excised. The wound failed to heal as expected due to the patient developing a methicillin-resistant *Staphylococcus aureus* infection. She is currently being closely monitored due to the unknown pathway the carcinoma may take.

BACKGROUND

Primary cutaneous myxoid spindle cell squamous cell carcinoma (MSC SCC) was first described by Yang *et al.*¹ Six cases of this new variant of SCC were noted in their report. No other literature regarding MSC SCC has been published since. We describe a further case of MSC SCC. Owing to the rarity of MSC SCC, it is not possible to predict the prognosis for these patients. This case highlights the diagnostic criteria Yang *et al.*¹ introduced to differentiate MSC SCC from other SCCs and the need for close monitoring of these patients to help predict patient prognosis.

CASE PRESENTATION

A 72-year-old Caucasian woman presented with a round 7 mm nodular lesion to her right shin, with associated dry skin. This nodule had increased in size, but was slow growing. The patient had a history of actinic keratosis of the face and chest. Her skin was markedly sun damaged. On visual examination, the lesion was thought to be a naevus or basal cell carcinoma. The nodule was excised with an adequate margin.

On histology, there was a well-defined, unencapsulated lesion composed of stellate and spindled cells within a prominent myxoid stroma. There was moderate cytonuclear atypia. Mitotic figures, including an atypical mitosis, were seen (figures 1A, B).

Extracellular mucin-containing stroma was seen on the Hales colloidal stain (figure 2A). Immunohistochemistry confirmed that the atypical cells were strongly and diffusely positive for pancytokeratin (AE1/3), CAM5.2, 34BE12, CK5/6 and P63 (figure 2B).

The histological findings were consistent with a primary cutaneous MSC SCC. The tumour was 6.3 mm in depth and excision appeared complete.

In the case reported, actinic keratosis or SCC in situ was not seen. It is difficult to exclude metastasis on histology if an SCC does not have an epidermal component because SCCs from all sites will show a similar immunohistochemistry profile. For a long-standing solitary lesion on the leg, as in the case we report, metastasis is less likely than if multiple new lesions were found. This variant of SCC is also commonly not associated with an epidermal component.

TREATMENT

After a multidisciplinary team discussion, wider excision and adjuvant radiotherapy was planned. The patient has had this excision and is now being closely monitored for recurrence and metastases.

OUTCOME AND FOLLOW-UP

The lesion was adequately excised. Following examination of the groin, no enlarged lymph nodes were found. The wound did not heal as expected

Figure 1 (A) H&E stain (×16). (B) H&E stain (×400).

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Figure 2 (A) Hales colloidal iron (stains mucin). (B) AE1/3—a pan-cytokeratin that stains epithelial cells (×200).

due to the patient developing a methicillin-resistant *Staphylococcus aureus* infection. She is currently being closely monitored because it is unknown what pathway this rare skin cancer will take. The patient has been advised to monitor for enlarged lymph nodes and other skin changes.

DISCUSSION

In 2010, Yang *et al*¹ described six cases of MSC SCC. The lesions that were described were primary cutaneous and mucocutaneous SCCs with prominent extracellular stromal mucin deposition, and with an epithelial spindle cell component. Yang *et al*'s¹ article was used as guidance in our case to help diagnose the lesion. There has not been further literature, to date, describing this rare form of SCC.

Primary cutaneous SCC is the second most common form of skin cancer.^{1–4} There are many subtypes. Cutaneous spindle cell SCC is an uncommon form of SCC, and has a less than 2% chance of metastasising. This risk increases when it is associated with prior skin damage or immunosuppression.^{3–4} Intracellular mucin production is uncommonly demonstrated in cutaneous SCCs and it is rare that prominent stromal mucin production is seen.^{1–7} Sarcomatoid carcinomas in mucosal areas have a worse prognosis when compared with cutaneous lesions.^{7–8}

Yang *et al*¹ derived histological criteria for diagnosing MSC SCC from their six cases. The inclusion criteria were as follows:

- Predominantly poorly differentiated spindle cells;
- Prominent myxoid stromal changes are shown in more than half of the lesion;

Neoplastic spindle (and squamous) cells are positive for at least CK, especially high-molecular-weight CK;

Neoplastic cells are negative for melanocytic and mesenchymal markers such as S100, MART-1, actin, myogenin and desmin.¹

The first three criteria were met in all six of their cases.¹

This case met the majority of Yang *et al*'s¹ diagnostic criteria, confirming the diagnosis of MSC SCC. As in the six reported cases, the lesion was composed mainly of poorly differentiated spindle squamous cells and contained prominent myxoid stroma. Positive staining with CKs and p63 correlated with Yang *et al*'s¹ cases.

Several of the cases described by Yang *et al*¹ had local recurrences and one patient had metastatic disease. MSC SCC is such a rare carcinoma that it is difficult to determine the prognosis. As in the six cases by Yang *et al*,¹ the lesion we describe in this case was deeply invasive, indicating MSC SCC may be an aggressive neoplasm. Our case highlights the value of Yang *et al*'s criteria for diagnosing MSC SCC, and for preventing misdiagnosis. Careful follow-up of the patient will help in understanding the nature and history of this exceedingly rare neoplasm and contribute to the limited literature.

Learning points

- ▶ To be aware of other diagnoses of skin lesions that look like common skin cancers.
- ▶ Value of Yang *et al*'s criteria for diagnosing myxoid spindle cell squamous cell carcinoma and preventing misdiagnosis.
- ▶ Importance of close follow-up of these patients to understand the nature and history of this rare skin cancer.

Contributors CNH wrote the case report with the help of RG and IK. RG was the reporting dermatopathologist of the excised lesion. CNH was invited by IK to write the case report.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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