

Case Report

The curious case of a cutaneous eruptive hybrid: an admixture of carcinoma and sarcoma

奇特的皮膚發疹性混合個案：上皮癌及肉瘤的摻雜

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Carcinosarcomas (CS) are a rare group of skin tumours with malignant epithelial and mesenchymal differentiation. Given the small number of reported cases, the epidemiology, histogenesis, and natural history of the disease remain unclear. Furthermore, there is a lack of consensus regarding treatment options and follow-up recommendations.

癌肉瘤是一組罕見的皮膚腫瘤，同時包含惡性的上皮細胞及間質細胞分化。此等病例少之又少，其流行病學、組織發生學及自然演變仍不為人知。除此以外，就此病的治療選擇及跟進建議，現時亦未有共識。

Keywords: Carcinosarcoma, basal cell carcinoma, osteosarcoma, squamous cell carcinoma

關鍵詞： 癌肉瘤，基底細胞癌，骨肉瘤，鱗狀細胞癌

Case report

An 87-year-old Caucasian male was referred for assessment of a rapidly growing nodule over the left knee. The nodule had enlarged over a period

of about one month. Relevant past medical history included multiple basal cell carcinomas, cutaneous squamous cell carcinomas and squamous cell carcinoma of the right parotid gland with local lymph node invasion which was successfully treated surgically.

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On examination, there was a 20 mm by 20 mm partly pigmented and vascular-looking nodule over the anterior distal aspect of the left thigh (Figure 1). There was no discharge or surrounding erythema. The exact nature of the tumour was not clinically obvious although possibilities including atypical fibroxanthoma, leiomyosarcoma and amelanotic melanoma were entertained. There was no clinical evidence of regional lymphadenopathy or distant metastasis. The rest of the examination including cardiovascular, respiratory, abdominal and neurological systems was unremarkable.

An excisional biopsy of the tumour was performed. The histopathology was consistent with carcinosarcoma, although elements of basal cell carcinoma and osteosarcoma were evident (Figure 2). AE1/AE3 and vimentin stains were positive (Figure 3). There was no evidence of lymphovascular invasion. The lesion extended into the deep dermis. The nearest lateral excision margin was 2.5 mm and the nearest deep excision margin was 2 mm. Full blood count, renal and liver function tests were all within the normal



Figure 1. 20 mm by 20 mm nodule over the anterior aspect of the distal left thigh.

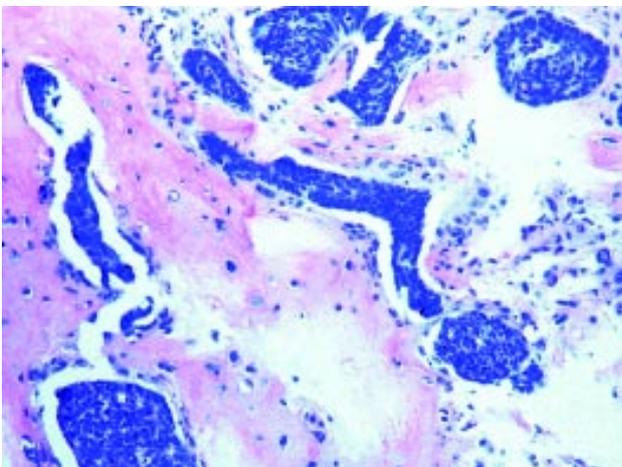


Figure 2. The tumour shows a biphasic histology, with a basaloid carcinomatous component, and a stromal component showing features of osteosarcoma (H&E, x100 magnification).

range. Computed tomography of the chest, abdomen and pelvis showed emphysematous changes in both lungs and probable hepatic cysts. There were no other significant abnormalities.

Post-operatively, the options of a wide excision and adjuvant radiotherapy were considered. The patient was agreeable with not having additional treatment at that point. The patient was reviewed three months after the excision and the excision site was satisfactory. There was no regional lymph node involvement. It was agreed for further reviews to be conducted at six-monthly intervals with the option of extra reviews on an as-necessary basis.

Discussion

Carcinosarcomas (CS) are a rare group of tumours with malignant epithelial and mesenchymal differentiation. The epithelial component can be epidermal, either basal or squamous cell carcinoma, or adnexal such as spiradenocarcinoma, porocarcinoma, proliferating tricholemmal cystic carcinoma,

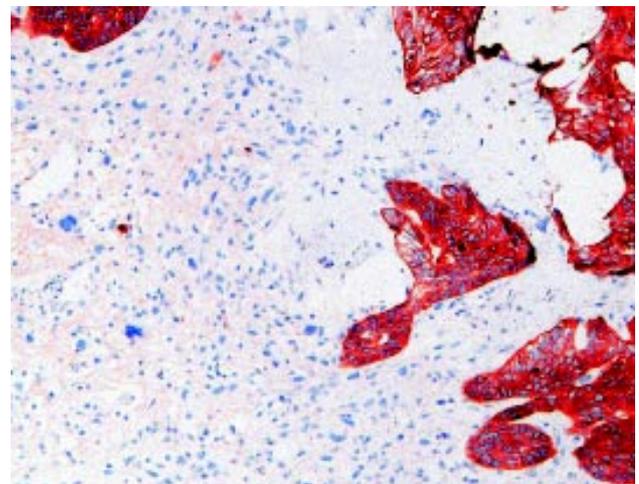


Figure 3. Immunoperoxidase staining for pancytokeratin (AE1/AE3) highlights the carcinomatous component, with no staining of the sarcomatous component (AE1/AE3 [Cell Marque] stain, x100 magnification).

or matrical carcinoma. The mesenchymal component is usually a fibroxanthoma, osteosarcoma or chondrosarcoma. Rarely, the mesenchymal component is a fibrosarcoma, leiomyosarcoma or rhabdomyosarcoma. CS have been reported in most organs, including the skin.¹

The histogenesis of CS remains unclear. The convergence hypothesis suggests the tumours are multiclonal and they arise from distinct epithelial and mesenchymal stem cells. The divergence hypothesis suggests that the tumours are monoclonal and arise from a single totipotent cell that undergoes differentiation into separate epithelial and mesenchymal components in a synchronous or metachronous manner.¹

The incidence and prevalence of cutaneous CS are unknown. Currently, there are less than a hundred reported cases. Nomenclature remains a problem in the literature. Definitive diagnosis requires demonstration of both epithelial and mesenchymal components. These tumours need to be differentiated from the more common skin tumours such as spindle cell melanoma, spindle cell squamous cell carcinoma and dermatofibrosarcoma protuberans. For precise diagnosis, immunohistochemistry is necessary. It should be noted that metastatic disease from distant sites is not uncommon, including the uterus.²

Epidermal CS patients tend to be older men who have had the tumour for a relatively short period of time before diagnosis. Their tumours usually arise on sun-exposed skin. Information available to date suggests that the patients are not likely to develop visceral metastases or die from their CS. On the other hand, adnexal CS patients tend to be young females who have had the tumours for more than 10 years after which the tumours suddenly increase in size and ulcerate. Adnexal CS have higher metastasis and mortality rates.¹ The type of mesenchymal component and CS size does not appear to be associated with recurrence rate, metastasis rate and outcome. However,

undifferentiated mesenchymal elements have been associated with a higher percentage of fatal outcomes than those with osteosarcoma elements.³

In a meta-analysis of 42 patients, multivariate analysis showed that a tumour that had been present for greater than three years, recent growth and regional lymph node involvement predicted poor outcome for all CS patients. Presence of adnexal differentiation, age less than 65 years, tumour greater than 2 cm and a truncal location may also have negative impact on the outcome. The type of heterologous elements, ulceration, presence of squamous cell carcinoma in epidermal CS and gender did not significantly impact on disease-free survival. Overall, adnexal CS carried a poorer prognosis compared to epidermal CS: 5 year disease-free survival, 25% vs. 70%, regional lymph node involvement 28% vs. 12% and visceral metastasis 50% vs. 8% respectively.¹

Because of the small number of CS cases so far, treatment of CS has been rather ad hoc and principally surgical with or without adjuvant radiotherapy. One literature review suggests that for lesions confined to the skin, a wide surgical excision with or without radiotherapy is adequate.² Few case reports state the excisional margins and there are no data at present to recommend the minimum surgical margins. Based on Brodland and Zitelli's recommendations for squamous cell carcinoma (SCC), a 5 mm excision margin would seem reasonable and a wider margin may be needed with higher risk tumours such as those with larger size, greater depth and proximal position.⁴ Potential benefit from primary and adjuvant radiotherapy in CS patients seems plausible given National Comprehensive Cancer Network (NCCN) recommendations in the management of cutaneous SCC.⁵

However, there is a lack of clear data regarding CS therapy in the literature. In a review of 29 CS patients, 50% of the patients treated with surgery

and adjuvant radiotherapy progressed on to regional recurrence or distant metastasis.⁶ Given the possibility of local recurrence, local regional metastasis and visceral metastasis, regular follow-up is recommended. Based on NCCN SCC guidelines, a reasonable follow-up plan may include three to six-monthly reviews plus further imaging if indicated for the first two years. After that, the patients should have six to 12-monthly reviews for three years and then yearly for life. However, the frequency of reviews may need to be increased if there are high-risk or poor prognostic features.⁵

Further research into this curious cutaneous hybrid is necessary. Meanwhile, clinicians should consider the possibility of carcinosarcoma when they are faced with a fast growing skin tumour without typical features of the more common tumours such as basal cell carcinoma or squamous cell carcinoma.

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