Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Cervical in-transit metastasis from a truncal basal cell carcinoma

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Summary

The authors describe a rare case in which a cervical metastatic basal cell carcinoma (BCC) occurred from a small, non-ulcerated primary lesion on the trunk of a female patient. The metastasis had the same immunohistochemical staining pattern as several biopsies from the primary site. It was immediately adjacent to the left neck regional nodes and we view this as an in-transit metastasis. There is often debate about the validity of BCC metastases to lymph nodes but an in-transit lesion strengthens the argument that this does rarely occur.

BACKGROUND

BCC is the commonest malignancy in Caucasians but metastasis is estimated to occur in only 0.0028–0.1% of cases, with about 250 cases reported.^{1–3} Most metastases occur in men. The BCCs from which they arise are commonly large, facial, locally invasive and destructive, ulcerated, long-standing, treatment-resistant and histologically aggressive. Most convincing reports of metastasis involve local lymph nodes, lung or bone; the validity of many earlier reports that predated current immunohistochemistry methods is debatable and most recent reviews presume that some systemic metastases may actually be from other tumours, such as small cell carcinoma of lung. About 10% of BCC metastases are to skin, but some of these may have been further primary lesions, and the diagnosis in some lymph node metastases has also been doubted.^{4,5} We report a case of immunohistochemically confirmed metastatic BCC in subcutaneous tissue at the level of, but not related to, cervical lymph nodes. This lesion appears to represent an in-transit metastasis and adds support to reports of lymph node metastasis. The American Joint Committee on Cancer has defined in-transit metastasis as metastasis occurring more than 2 cm from the primary lesion but before the first echelon of regional lymph nodes.

CASE PRESENTATION

A 65-year-old woman had a 1.5×1.0 cm BCC on her left upper back treated by curettage and electrocautery; histology showed nodular BCC with some infiltrative foci (figure 2). There was no apparent recurrence at 6-month review but 2 years later she noticed that the scar had thickened and had further curettage and cautery. Histology showed nodular BCC.

Three months later she reported a 6-week history of a left-sided neck lump, clinically felt to be a 1 cm level 5 node.

This was 20 cm from the primary BCC site at which there was a concurrent further recurrence of BCC larger than the original lesion (figure 1). Fine needle aspiration of the neck lump was inadequate. Chest x-ray was normal. A panendoscopy and excision biopsy was planned. Endoscopy was normal but complete excision was precluded as the 1.5 cm mass identified at the time of surgery was closely related to the accessory nerve and no clear surgical plane could be found. Incisional biopsy was taken. Histology showed a predominantly basaloid lesion with small areas of squamous differentiation; some neural tissue was present but no lymphoid tissue (figure 4). A left level 2–5 selective neck dissection was performed and at the same time the recurrent BCC widely excised (figure 3). The latter BCC histology was more aggressive in appearance than previously, as was the metastasis. None of the primary BCC specimens had shown squamous differentiation, lymphovascular or perineural invasion. Immunohistochemistry on all samples showed both the BCC and metastasis to be consistently positive to Ber EP4, Neural Cell Adhesion Molecule (NCAM), cytokeratin 5/6 and cytokeratin 34beta12, but negative to Epithelial Membrane Antigen (EMA), suggesting BCC rather than squamous cell carcinoma (SCC). Thirty-seven neck lymph nodes contained no disease.

INVESTIGATIONS

Histology and immunohistochemistry of truncal and neck lesions.

TREATMENT

A left level 2–5 selective neck dissection was performed and at the same time the recurrent BCC widely excised.

OUTCOME AND FOLLOW-UP

The patient made a good postoperative recovery and remains free from recurrence 3 years after her surgery.

Figure 1 Recurrent basal cell carcinoma on left upper back and the site of biopsy of left neck metastasis (scar visible).

DISCUSSION

The drainage pathway of posterior trunk nodes to the neck has been well-studied.⁶ Most of the work has been done with malignant melanoma, with neck node drainage occurring in approximately 20% of posterior trunk melanomas. Several case reports and small series describe metastases of BCC to neck lymph nodes, but most of these have been from primary BCCs on the face.^{7–10}

This case is very unusual in several : the patient was female and the primary BCC was small, truncal and histologically not aggressive. In their review of 238 cases of metastases, Snow *et al*⁷ documented a primary BCC on the trunk in just 17% of cases; the mean size of trunk/extremity primaries that metastasised was 217 cm² compared to less than 2 cm² in the present patient. However, more similar to

our patient, Tavin *et al*¹¹ documented six small primary BCCs that underwent multiple recurrences before metastasising. Others have documented that it is common for the primary BCC to have been resistant to treatment.¹ Our patient's primary BCC and the recurrent area after 2 years had been treated by curettage and cautery. Although the British Association of Dermatologists' guidelines do not generally recommend curettage for recurrent lesions, it is a 'generally good choice' for small nodular lesions in low-risk sites such as this, and even in retrospect was an appropriate choice for a small BCC with no worrying original histological features.¹²

The presence of a metastatic mass of BCC unrelated to a lymph node but immediately adjacent to the cervical lymph node basin is the most unusual feature of this case. A review

Figure 2 Currettings from the original basal cell carcinoma.

Figure 3 Biopsy of metastatic basal cell carcinoma in the neck. Neural tissue near the metastasis is indicated with an arrow.

of 170 previously reported cases of metastasis found that lymphatic and haematogenous spread were equally prevalent, with lymph nodes, lungs and bone being the commonest site of metastases;⁵ this review also noted that subcutaneous metastases unrelated to lymph nodes were not uncommon. Interestingly, the authors of this review

commented that their impression was that ‘metastatic spread to the pre-auricular, parotid or even the submandibular region might well have been subcutaneous metastases’ (rather than lymph node metastases as reported).⁵ Some skin metastases may actually be explained by direct spread from deeper structures—for example, a

Figure 4 The truncal basal cell carcinoma excised at the time of neck dissection.

lesion reported as adjacent to and involving the parotid gland.⁷ The mechanism for subcutaneous and skin metastases has not been proven and could represent either lymphatic or haematogenous spread. Although occurring outwith lymph nodes, our patient's metastasis could not conceivably represent direct spread; its site in relation to local lymphatics, and its histological and immunohistochemical profile, made it unlikely to be anything other than an in-transit metastatic BCC. It is surprising, although reassuring, that all 37 lymph nodes in the neck dissection proved to be negative.

We have been unable to find any report that conclusively suggests the possibility of in-transit metastasis. One report of a subcutaneous tumour documented lymphoid tissue on the edge of a subcutaneous metastasis and, although the authors did not attach any great significance to this finding, they probably described a similar but just slightly more advanced equivalent to the situation in our patient.⁵ Our patient's metastasis fulfilled older criteria for diagnosis of metastatic BCC (skin rather than mucosal origin, distant to the primary site and similar histology). Immunohistochemical concordance could also reasonably be expected, as we documented. In-transit metastases have been described in most tumours in which lymphatic spread and lymph node metastases occur. Therefore, it is reasonable to assume that in-transit metastases should also occur in some patients with metastatic BCC but this has not previously been confirmed—our report strongly suggests that this has now been documented.

The treatment modality for in-transit metastasis of BCC is controversial. There are no clear guidelines as it is such a rare event. In our case, adjuvant radiotherapy for this area was considered but was felt not to be necessary as excision was complete and all regional lymph nodes were negative.

The nearest comparable guidelines are for in-transit metastasis of malignant melanoma and standard guidelines do not recommend adjuvant radiotherapy.^{13 14}

Learning points

- ▶ Although aggressive facial BCCs are most likely to metastasise, non-aggressive lesions from the trunk or extremities can also metastasise.
- ▶ In transit metastases (outwith lymph nodes) can occur in patients with metastatic BCC.
- ▶ In transit neck metastases from metastatic BCC can be successfully treated by neck dissection.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Khan MK, Powell S, Cox N, Robson A, Murrant N. Cervical in-transit metastasis from a truncal basal cell carcinoma. *BMJ Case Reports* 2010; 10.1136/bcr.09.2009.2281, date of publication

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