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Short communication

Extensive bony metastases from facial metatypical basal cell carcinoma: a case report

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Abstract

Metastatic basal cell carcinoma (BCC) is rare. We treated a 44-year-old woman with an extended facial metatypical BCC in whom staging showed no local or distant metastases, but one year after resection, we diagnosed a local recurrence. Re-staging, using a fludeoxyglucose positron emission tomography-computed tomogram, (FDG PET-CT) showed suspected accumulations of FDG in the whole axial skeleton. Bone punch biopsy examination confirmed extensive bony metastases, and after resection of the relapse, we began her on a systemic treatment with a Hedgehog-pathway inhibitor (vismodegib), which resulted in partial remission.

Keywords: metatypical basal cell carcinoma; PET-CT; bone metastases; hedgehog-inhibitor; vismodegib

Introduction

Basal cell carcinoma (BCC) is one of the most common types of cancer and is generally localised on facial skin that has been exposed to the sun.[1] Beside the nodular type (60% −80%) and others, metatypical BCC is characterised by an increased risk for transformation into squamous cell carcinoma (SCC).

Confocal-microscopic laser surgery can be a promising technique for BCC,[2] and other non-surgical options include radiation, chemotherapy (5-fluoruracil, cisplatin), immune response modifiers (imiquimod) and photodynamic treatments.[1–3] For locally progressive or metastatic BCC, Hedgehog-pathway inhibitors (such as vismodegib or sonidegib) can be used. Distant metastases or those in the lymph nodes are rare and can be found in 0.0028% − 0.55% of cases with a poor prognosis. A tumour larger than 3 mm seems to be a relevant risk factor for[1,4] metastases from BCC, (particularly in bone) which have been described in few single case sudies.[1]

Case report

A 44-year-old woman presented with an extended tumour in the right cheek, the right upper and lower lips, and the corner of the mouth (Fig. 1). In the oral cavity, the tumour had infiltrated the vestibulum, including the alveolar ridge of the upper and lower jaw. Histological examination confirmed the diagnosis of a metatypical BCC. FDG PET-CT staging was done because of the high risk of transformation to SCC, the infiltration of the oral cavity, and the size of the tumour, but it did not confirm any local lymph node or distant metastases.

After radical resection of the tumour with a sufficient margins (10 mm) in all directions, reconstruction was completed with a local cervical platysma flap. After one year

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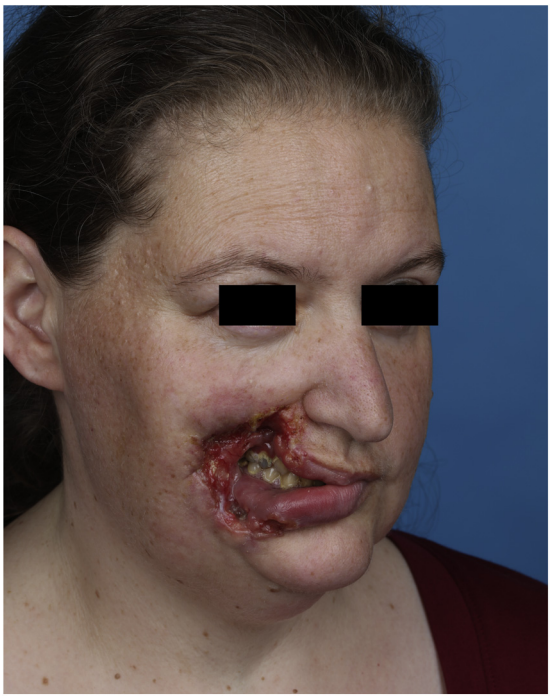

Fig. 1. Metatypical basal cell carcinoma of the right cheek, including the right upper and lower lips, and the right corner of the mouth after debridement.

with no relapse, clinical observation and magnetic resonance imaging showed a local recurrence of the metatypical BCC. Re-staging (FDG PET-CT) showed multiple suspicious accumulations of FDG in the whole axial skeleton with a pathological fracture of the left humerus (Fig. 2).

Punch biopsies of bone from the pelvis confirmed bony metastases from the metatypical BCC with a widespread suppression of the haematopoietic bone marrow (Fig. 3). After resection, systemic treatment with vismodegib was started, and four months later FDG PET-CT confirmed partial remission of the metastases with progressive disease in the second lumbar vertebra. Overall, the patient experienced only mildly adverse effects while on vismodegib. It will therefore be continued in combination with periodic clinical and radiological re-staging.

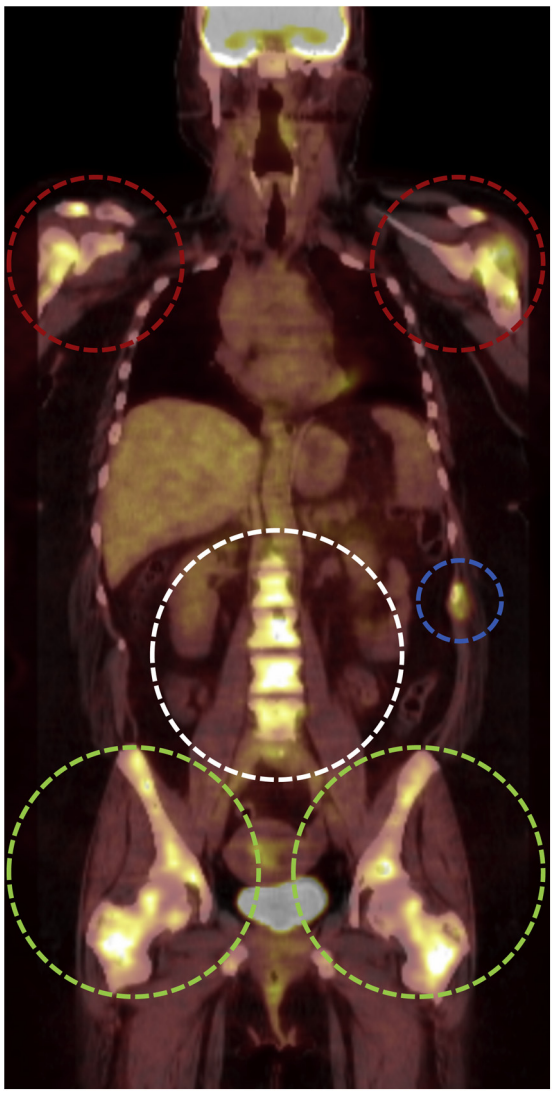

Fig. 2. Fludeoxyglucose positron emission tomography-computed tomogram scan that shows multiple bony metastases from basal cell carcinoma of the whole axial skeleton, including the right and the left humerus (red circles) with a pathological fracture of the left humerus, the spinal column (white circle), the ribs, (blue circle) the right and left pelvis, and the femoral head (green circles).

Discussion

Metastases from BCC, particularly in bone are rare, so treatment for them has not been investigated in depth so far. Branson et al reported a series of 10 metastatic facial BCC over 20 years. The common sites for metastases were the ipsilateral parotid gland and cervical nodes with a median survival time of 5.3 years (range 7 months – 22.8 years).[5] Piva de Freitas et al described a patient with a bony metastasis in one vertebra and McGrane et al reported spinal cord compression that had been caused by bony metastases from BCC, and was treated by surgical decompression and a Hedgehog-pathway inhibitor.[1,6]

With respect to treatment with drugs such as vismodegib in metastatic BCC, an objective response of about 33.6% (95% CI 33.1% to 34.2%) and a complete response of 3.9% (95% CI 3.3% to 4.4%) within a median duration of treatment of 35.8 weeks (95% CI 35.1 to 36.5) have been reported.[7] Other studies described a response rate that ranged between 15% – 37% with a high rate of adverse events.[1] We disagree with the assumption that Hedgehog-pathway inhibitors may be associated with an increased risk of development of SCC because, to the best of our knowledge, no adverse events have been associated with them to date.[8]

In 2018, the estimated costs for vismodegib treatment were about 65.000 euros/year (pharmacy sales), which is a considerable cost. Next to be tested were an immune checkpoint

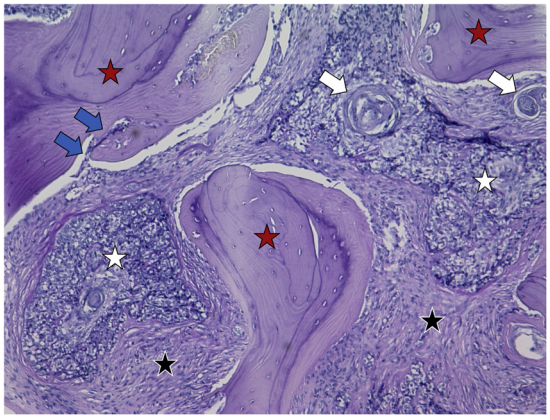

Fig. 3. Histological slide of a bone punch biopsy from the left pelvic bone shows proliferations of the metatypical basal cells (white stars) with characteristic bony beads as hallmarks of a metatypical basal cell carcinoma (white arrows) within regular formations of bone (red stars). The carcinoma is infiltrating the surrounding bone (blue arrows). Black stars show reactions of desmoplastic stroma.

inhibitor treatment with nivolumab (anti-PD1 inhibitor) in BCC that was resistant to Hedgehog-pathway inhibitors,[9] and pazopanib (tyrosin-kinase inhibitor).[10] Both may be promising options for future treatment.

Even if BCC metastases are rare (particularly in bone) there is a need for further investigations to develop comprehensive treatments, particularly combination therapies, which could be of considerable clinical relevance in cases that are not responding. With respect to metatypical BCC, affected patients should be followed up closely. Sufficient margins during resection are essential to ensure complete removal of the carcinoma and to prevent local recurrence, and it must be noted that Moh's technique of microscopic surgery is a promising option for this. As an alternative to resection, initial treatment with Hedgehog-pathway inhibitors needs to be discussed critically.

Conflict of interest

We have no conflicts of interest. This case was presented at the 67th meeting of the German Association for Oral and Maxillofacial Surgery, 2017.

Ethics statement/confirmation of patient's permission

Ethics approval is not required. We have the patient's permission to publish this paper, but information that could identify her has been excluded.

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