An unexpected clinical finding

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We describe a rare case of bronchogenic carcinoma with metastases to the 3rd and 4th toes which presented as diabetic foot ulcers. Phalangeal metastases commonly display inflammatory symptoms that may mimic an acute infection.

Presentation

A 74-year-old man with type 2 diabetes of 5 years duration was seen as an urgent referral. His diabetes was well controlled with tolbutamide and he had an HbA_{1c} of 6.4%. He was a non-smoker with a past medical history of left ventricular failure. He presented with painful, swollen and inflammed left 3rd and 4th toes, which were ulcerated and greyish/brown in colour.

Diagnosis

A clinical diagnosis of infection was made. The X-ray of his left foot showed destruction of terminal phalanges of the 3rd and 4th toes consistent with infective osteomyelitis (*Figure 1*).

The patient was admitted for intravenous antibiotics and subsequently the affected toes were amputated. During his stay, he was found to have mild renal impairment, microcytic hypochromic anaemia with a haemoglobin of 8.8 g/l for which a blood transfusion was given, and a haemorraghic left pleural effusion which was negative for gram stain and culture (including acid-fast bacilli) and cytology.

While he was awaiting further investigation for his pleural effusion, histology of his toes showed identical pleomorphic undifferentiated carcinomas. Further investigations confirmed that the patient had a bronchogenic carcinoma with metastases to the left 3rd and 4th toes. Palliative treatment was administered but he died a few months later.

Background

Origin of metastasises

Metastases to the distal phalanges of the fingers and toes are rare and associated with poor prognosis; mean survival is a few months (Morris and House, 1985; Baran and Tosti, 1994). Phalangeal metastases commonly display inflammatory symptoms that mimic an acute infection. The most common site of metastases to the bones of the hands are the distal phalanges, often the thumb (Kerin, 1983). Foot metastases most frequently involve the tarsal bones, and the phalanges are involved only in a minority of cases (Zindrick et al, 1982). The absence of red bone marrow in acral bones may contribute to the rarity of acral metastases.

Figure 1. Destruction of the terminal phalanges of the 3rd and 4th toes

Signs and symptoms

Phalangeal metastases occur more frequently in men and in the 40–60 years age group. The lung is the most common primary site that metastasises to the hand, whereas the genitourinary tract is the most common source of foot metastases (Baran and Tosti, 1994). Most metastatic lesions in the digit initially involve bone and subsequently spread to soft tissue. The terminal phalanx appears swollen, blue-red, tender and fluctuant, which mimics infection. Less commonly, distal phalangeal metastases produce red-purple, dome shaped verrucous or ulcerated nodules in the distal nail bed. Radiographically, phalangeal metastases may be difficult to distinguish from osteomyelitis or tuberculous dactylitis.

Metastases are more destructive and frequently are associated with a large tissue mass and phalangeal metastases are almost always osteolytic (Baran and Tosti, 1994). In our patient, two toes were affected simultaneously, which is unique, and led to a clinical diagnosis of infection. At times, metastases may be the initial sign of an underlying silent primary malignancy and the patient seeks medical attention for the symptomatic digit (Cross, 1985; Amadio and Lobarddi, 1987; Kent and Wu, 1995). Metastases may be monoostotic, polyostotic, unilateral or bilateral and sometimes symmetric, and concomitant involvement of finger and toe may be seen (Morris and House, 1985). Baran and Tosti (1994) reported that metastases to the terminal phalanges from bronchogenic carcinoma accounted for 43% of the cases and metastases from the breast and kidneys accounted for 10% each.

Making the diagnosis

Phalangeal metastases should be considered in the differential diagnosis of inflammatory processes of the digits. X-ray and histology should be performed in every doubtful case because as in this patient it can be the first presentation of underlying occult malignancy. The diagnosis is especially problematical in patients with diabetes in whom foot ulceration is common, and where infection may complicate neuropathic or vascular causes. ■

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