Hypertrophic osteoarthropathy, spider naevi and oestrogen hyperexcretion associated with adenocarcinoma

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Summary: We describe two patients with hypertrophic osteoarthropathy, spider naevi and elevated 24 h urinary oestrogen excretion associated with an adenocarcinoma. In one of the patients, the spider naevi and the clinical signs of hypertrophic osteoarthropathy disappeared and the 24 h urinary oestrogen returned to normal following removal of the tumour.

Introduction

Hypertrophic osteoarthropathy is an uncommon condition consisting of non-pitting swelling of the tissues overlying the distal ends of long bones associated with tenderness and radiographic evidence of periosteal new bone formation. The majority of cases have associated clubbing of the digits and are most frequently found in conjunction with primary lung neoplasms. Its association with spider naevi, in the absence of chronic liver disease, has rarely been mentioned in the literature. Jao *et al.* (1969) reported two such cases associated with oestrogen hyperexcretion. We report here two further cases of hypertrophic osteoarthropathy in conjunction with spider naevi and oestrogen hyperexcretion in two post-menopausal women, both of whom had an adenocarcinoma.

Case 1

A 52 year old woman was admitted with a 3 month history of a dry cough, anorexia, weight loss and typical features of hypertrophic osteoarthropathy with non-pitting swelling of her ankles and fingers, stiffness in her ankles, wrists and hands and tenderness over her distal tibiae and radii. She had marked finger clubbing and numerous spider naevi over her upper chest, back, arms and thighs. These had appeared with the onset of her illness. Three years previously she had undergone a hysterectomy for an adenocarcinoma of the uterus. Her liver function tests were normal, apart from a slightly elevated alkaline phosphatase. Pre-operatively her 24 h urinary non-pregnant oestrogen excretion was 138 nmol/24 h (normal post-meno-

pausal range: 10–55 nmol/24 h). It was not possible to repeat the level post-operatively. X-rays of her limbs showed the characteristic periosteal new bone formation involving the distal tibiae, fibulae and 1st metacarpals. The chest X-ray showed a raised right diaphragm with a small right pleural effusion. At thoracotomy, in association with the small pleural effusion, a sub-diaphragmatic, intrahepatic, multiloculated cyst was found. This invaded neither the lung nor the diaphragm. Histological examination revealed an adenocarcinoma consistent with a metastasis from the previously diagnosed uterine tumour.

Case 2

A 54 year old, post-menopausal woman presented with an 8-week history of cough, weight loss, pain, stiffness and swelling of the ankles and pain and swelling of the wrists and fingers. Over the same period, she had noticed the appearance of clubbing of the fingers and of numerous spider naevi over her chest, back and arms. The chest X-ray revealed a mass occupying the left upper lobe and she had the characteristic periosteal new bone formation of hypertrophic osteoarthropathy involving the tibiae (Figure 1) and wrists. Liver function tests were normal, apart from a raised alkaline phosphatase. Pre-operatively, her urinary 24 h oestrogen excretion was 141 nmol/24 h. An upper abdominal ultrasound was normal. She underwent a left pneumonectomy and histology showed the tumour to be an adenocarcinoma. Post-operatively she had a rapid improvement in the symptoms and physical signs of the osteoarthropathy, the spider naevi regressed within 5 days and the 24 h oestrogen excretion returned to normal.

Figure 1 Hypertrophic osteoarthropathy of the distal tibia in Case 2.

At the onset of the illness the patient noticed that her hair, which throughout her life had been naturally curly, became straight and limp. Within three months of the operation, her hair had returned to its previously curly state.

Discussion

These two cases of osteoarthropathy have a number of unusual features. They were both associated with spider naevi and oestrogen hyperexcretion. In Case 2, these abnormalities, along with the clinical signs and symptoms of hypertrophic osteoarthropathy, improved following removal of the tumour. The hair

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changes in this patient may have had nothing to do with either the tumour or the osteoarthropathy but it is felt that the feature is worth documenting. In Case 1, the osteoarthropathy appeared to be related to hepatic metastases from an adenocarcinoma, probably of the uterus. Epstein *et al.* (1979) reported hypertrophic osteoarthropathy in association with a number of different hepatic diseases but, so far as we are aware, it has not been reported with liver metastases from a primary uterine tumour.

Oestrogen hyperexcretion is well documented in hypertrophic osteoarthropathy (Ginsberg & Brown 1961; Jao *et al.*, 1969). Equally there are a number of cases in the literature with normal oestrogen excretion (Epstein *et al.*, 1979) and it seems likely therefore that oestrogen hyperexcretion is a frequently associated feature, rather than a causative factor in the pathogenesis of hypertrophic osteoarthropathy. It is interesting to note that both the cases previously referred to in the literature, in which spider naevi were a feature, the urinary oestrogen was elevated and it may well be that the spider naevi are in some way related to the abnormal oestrogen metabolism rather than to osteoarthropathy. It has long been suggested that spider naevi in chronic liver disease may be due to abnormal oestrogen metabolism (Sherlock, 1975).

We feel that these two cases re-affirm the occasional association of hypertrophic osteoarthropathy, spider naevi, oestrogen hyperexcretion and neoplasia. We think it likely that the osteoarthropathy is independent of the oestrogen hyperexcretion but that both are in some way related to the neoplasm and that the spider naevi are related to the abnormal oestrogen metabolism, rather than to the hypertrophic osteoarthropathy.