

Polyarthrititis as the presenting symptom of the occurrence and recurrence of a laryngeal carcinoma

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Abstract

A 50 year old male smoker presented with an identical seronegative polyarthrititis before both the occurrence and recurrence of a laryngeal tumour. The interval between the joint symptoms and discovery of the tumour was 11 and 13 months respectively. Treatment of the tumour resulted in complete disappearance of the arthritis on both occasions.

Polyarthrititis may be the presenting manifestation of an occult malignancy.¹⁻⁶ The clinical presentation of carcinoma polyarthrititis is variable, but although not diagnostic, several typical features suggest the possibility of an underlying malignancy—for example, late age of onset of arthritis, asymmetric joint disease, explosive onset, predominant involvement of the legs with sparing of the wrists and small joints of the hands, and absence of rheumatoid factor, of rheumatoid nodules, and of a family history of rheumatoid arthritis. A close temporal relation between the onset of articular symptoms and detection of the tumour should be present and hypertrophic osteoarthropathy or metastatic involvement of the synovium or periarticular bone should be excluded.⁵ Improvement of the joint symptoms when the underlying malignancy is treated and recurrence of the arthritis antedating the recurrence of the tumour have been reported.^{1 4 7-9} There is no predominant type of malignancy associated with carcinoma polyarthrititis, and, as far as we know, only four patients with a primary laryngeal tumour and articular symptoms have been reported.^{3 4 10}

We report the case of a patient with a seronegative symmetric polyarthrititis as the presenting symptom of both the occurrence and the recurrence of a laryngeal carcinoma.

Case report

A 50 year old man attended the rheumatology outpatient department because of arthralgias in November 1981. He had a four week history of pain and swelling of the fingers of both hands, wrists, and left elbow. The symptoms of arthritis developed over several weeks and did not improve during treatment with indomethacin (150 mg/day). There was no history of morning stiffness, general malaise, fever, or weight loss. He smoked about 60 cigarettes a week. General physical examination showed no abnormalities. Examination of the joints showed a slightly tender swelling of the left elbow. Both wrists, the fifth metacarpophalangeal joint of the right hand, and the second to fifth proximal inter-

phalangeal joints of both hands were swollen and limited in their movements. Laboratory results showed an erythrocyte sedimentation rate of 30 mm in the first hour (Westergren). A full blood count and biochemical profile were normal. The Waaler-Rose and latex fixation tests were negative. A chest radiograph was normal. Radiographs of hands and feet showed minimal degenerative changes. The patient was considered to have early rheumatoid arthritis and was treated with rest, physiotherapy, and non-steroidal antirheumatic drugs.

Eleven months after the onset of his joint symptoms the patient noted a swelling of the neck. A diagnostic work up, including a laryngoscopy, showed a supraglottic tumour. A laryngectomy was performed and at pathological examination the tumour was classified as a T2 N3 M0 squamous cell carcinoma. Postoperative regional radiotherapy was given to a total dose of 60 Gy. Within a month all signs and symptoms of arthritis had disappeared.

Eight years later, in February 1990, he returned to the department with a nine month history of joint complaints. He had experienced pain in his hands, wrists, elbows, shoulders, and knees, an early morning stiffness of half an hour, but no history of general malaise, fever, or weight loss. General physical examination showed no abnormalities. Examination of the joints showed a synovitis of the left elbow, both wrists, several metacarpophalangeal and proximal interphalangeal joints of both hands, and several metatarsophalangeal joints of the left foot. Laboratory tests showed an erythrocyte sedimentation rate of 53 mm in the first hour. A full blood count and biochemical profile were normal. Waaler-Rose and latex fixation tests were negative. Radiographs of chest, hands, and feet were unchanged. Repeated fibre endoscopies of the upper respiratory tract showed no signs of tumour recurrence. In June 1990, however, 13 months after the recurrence of the joint symptoms, a new swelling was discovered in the operation area. An excisional biopsy showed a squamous cell carcinoma, similar to the former tumour. Radical surgery, including dissection of the oesophagus, was performed. Two weeks after the operation all signs and symptoms of arthritis had again disappeared.

Discussion

Cancer of the larynx represents about 1-2% of the total cancer risk and is 10 times more common in men than in women.¹¹ The peak incidence is between 40 and 70 years of age.¹² Tobacco use has long been recognised as a

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Accepted for publication
16 July 1991

causative agent and the relative risk for smokers has been calculated to be as high as 39 times greater than for non-smokers.¹³ Histologically, more than 90% of the laryngeal cancers are of squamous cell origin. Laryngeal metastases from distant tumours are rare. Paraneoplastic syndromes have seldom been described in patients with primary laryngeal tumours; we were able to find only eight reported cases. Two patients had hypertrophic osteoarthropathy,⁴ two acanthosis nigricans,¹⁴⁻¹⁵ and one each had pseudo-Still's disease,¹⁰ oligoarthritis,³ arteritis of the digits,¹⁶ and an Eaton-Lambert syndrome.¹⁷ The last patient had an oat cell tumour, all others a squamous cell carcinoma. This is the third case report of a squamous cell carcinoma of the larynx and carcinoma polyarthritits.

The characteristic profile of a patient with carcinoma polyarthritits is, however, only partially applicable to our patient; there was indeed a close temporal relation between the onset of arthritis and the discovery of the tumour. Rheumatoid factor, rheumatoid nodules, and a family history of rheumatoid arthritis were absent. On the other hand, our patient was not old, had no asymmetric arthritis, no explosive onset, no predominant involvement of the legs, and no sparing of the wrists and small joints of the hands.

Amelioration of joint symptoms in carcinoma polyarthritits has been reported after removal of the tumour.^{1,4,7-9} Recurrence of the joint symptoms with tumour recurrence (either locally, or distantly) has been reported less often.^{1,4,18} In our patient the pattern of joint disease in both episodes was practically identical. Disappearance of the joint symptoms after removal of the recurrent tumour, as in our patient, has only been reported once.⁴ These observations support the belief that carcinoma polyarthritits is an entity with a causal relation between a malignant tumour and articular features.

The mechanism by which a malignant tumour produces an arthritis is not known. Speculations include cross reactivity of determinants on the synovium and neoplastic tissue, an autoimmune phenomenon originated by lymphocytes in hyperplastic lymph nodes draining tumour areas, damaging of natural 'antiarthritic' barriers, either by the tumour

itself or by an overshoot of the defence mechanisms against the tumour, and circulating immune complexes.⁵

In conclusion, our patient twice had a seronegative symmetric polyarthritits, respectively 11 and 13 months before the detection of a malignant laryngeal tumour. This case history emphasises that doctors should consider the possibility of carcinoma polyarthritits in a patient with seronegative symmetric polyarthritits. Furthermore, our case shows that with the resurgence of identical joint symptoms an extensive search should be performed for recurrence of the tumour.

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