Enthesitis and small cell lung carcinoma: a novel paraneoplastic syndrome not previously described

Sirs,

Paraneoplastic syndromes (PS) are a challenging expression of many malignancies, usually before their diagnosis or recurrence. This is a case of locally advanced small cell lung carcinoma heralded by enthesitis unresponsive to glucocorticoids and methotrexate, the first described case of a new paraneoplastic syndrome.

We describe the case of a 63-year-old patient, heavy smoker, who was referred to our Department due to persistent temporal headache and elevation of C-reactive protein (CRP: 2.5 mg/dl). Pain was irradiated to neck and shoulder and associated to arthralgias, fever, weakness and scalp dysesthesia. Non-steroidal anti-inflammatory drugs (NSAIDs) and amitriptyline were ineffective.

Suspecting temporal arthritis, we performed temporal artery biopsy (negative), and prescribed prednisone, while laboratory tests showed positivity of rheumatoid factor (RF: 19 IU/ml) and antinuclear antibodies (1:640 speckled).

Steroid therapy was only slightly effective in reducing cranial symptoms and prednisone tapering led to further increase of RF (6.9 mg/dl) and worsening of arthralgias at knees, elbows and ankles. Thus, we performed musculoskeletal ultrasoundography (US), which showed bilateral patellar tendon enthesitis, bilateral Achilles tendinitis and retrocalcaneal bursitis. Suspecting enthesoarthritis, we performed an intra-articular injection of triamcinolone and prescribed methotrexate, but no efficacy was reported.

In order to exclude a paraneoplastic syndrome, we eventually asked positron emission tomography/computed tomography scan, which showed a wide hypermetabolic focus in the upper lobe of the left lung (SUV 9).

Bronchoscopy and biopsies were eventually performed, with histological evidence of infiltrating small cell lung carcinoma (Ki67/MIB1 index 80%).

PS comprise a large number of signs and symptoms occurring during, before or after the diagnosis of a malignancy, involving organ and sites not primary invaded by the rur. The aetiology is usually unknown but may be related to the activation of the immune system and to growth factors secreted by the neoplasm.

PS may be systemic or involve single organs or system. Rheumatic PS may present as arthropathies, muscular disorders, vasculitis, scleroderma, fasciitis and many other conditions (1-3).

Distinguishing paraneoplastic arthritis (PA) from idiopathic arthritis is usually difficult and to date only 8 case series are reported in literature, for a total of 121 patients (4).

The largest and most recent cohort was described by Kiscak et al. (5), who compared 65 patients with PA with 50 affected by early rheumatoid arthritis (RA). PA seems to affect older patients than RA, with a higher male:female ratio. The onset is often acute, presenting with an asymmetric oligoarthritis or polyarthritis, although monoarthritides are described too (6). Markers of inflammation are usually elevated, while RF and anti-citrullinated proteins are negative in the majority of the patients. PA, typically unresponsive to NSAIDs and glucocorticoids but only to the treatment of the primary tumour, is often associated with breast and lung carcinoma (7) and haematological malignancies (8).

Our patient met many of the features reported above, but significantly differs from the previous reported cases, since he suffered from a bilateral enthesitis documented by an elevated power Doppler signal. His condition was more similar to enthesoarthritides than RA, although RF was positive, and no one of the cases we found in literature reported an involvement of the enthesis.

Interestingly, Hagiwara et al. (9) reported that, among 115 patients meeting CASPAR criteria, 4 developed malignancies after the onset of arthritis and 19 before. Unfortunately, this paper does not mention how many of those patients actually suffered from enthesitis rather than arthritis, so, to our knowledge, our patient remains the first reported and US-demonstrated case of paraneoplastic enthesitis, a possible new entity within the spectrum of rheumatic PS.

The correlation and coexistence of autoimmune and neoplastic diseases is an intriguing matter of debate (10), as demonstrated by the immune-related adverse events during checkpoint inhibitors therapy. The comprehension of the exact immunological mechanisms will shed new light on this topic, giving more precise tools for the management of such conditions.

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