Cellulitis of the axillary area

Thursday, 01 September 2005

A 28-year-old white man was admitted to our hospital because of chronic swelling and redness of the left sub-axillary area. No fever, pruritus, or sweating was reported. His past medical history was unremarkable. The patient reported that, after switching deodorant, he noticed a painful swelling in his left axilla 3 months prior to his admission to our hospital. He was treated by his family physician for postulated hidradenitis suppurativa with antibiotics and anti-inflammatory medications, which did not lead to any improvement. Because of the persistence of the lesion in the axilla, a fine needle aspiration was performed then, which showed "atypical degenerating cells suspicious for malignancy". This finding prompted referral to a major tertiary medical center. At that time there was a flare-up of symptoms in the left axilla in addition to the appearance of a new palpable, tender mass in his left supraclavicular area. This mass was chosen by the attending surgeon to be removed for testing. Culture of a part of the removed specimen grew Propionibacterium acnes. Microscopic examination showed fibrous adipose tissue with acute and chronic inflammation findings consistent with organizing abscess. No lymph node tissue was identifiable. Based on these findings the patient received treatment with levofloxacine 500 mg once a day and metronidazole 500 mg three times a day p.o., which, again, did not lead to any improvement.

Physical examination on admission showed temperature 37,5 degrees C and pulse rate 80/min. His body mass index (BMI) was 35,46 kg/m2 (weight: 128 kg, height: 190 cm). He had gynecomastia and inversion of the nipples. Examination of the chest and neck revealed inflammation of the skin surrounding the left nipple, extending up to the left axilla, and a scar in the left supraclavicular area related to previous biopsy (Figures 1-2). Small, palpable, and tender lymph nodes in the left axilla, left and right cervical areas and left and right inguinal areas were also found. All other systems were examined and found normal.

C-reactive protein level was increased at 2.99 mg/dl (normal less than 0.5 mg/dl). Erythrocyte sedimentation was increased as well at 39 mm/first hr. Complete blood count, blood glucose, aspartate aminotransferase (AST), alanine aminotransferase (ALT), glutamyl transpeptidase, bilirubin, lactate dehydrogenase (LDH), creatine phosphokinase (CPK), serum sodium, potassium, urea, and uric acid were all normal. Tests for cytomegalovirus (CMV), Epstein-Barr (EBV) and human immunodeficiency virus (HIV) were negative. Mantoux test was also negative.

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Differential diagnosis

Disorders causing cellulitis are the main part of the differential diagnosis. Infectious cellulitis, mainly bacterial, is the usual

suspect of such a clinical picture. Always bear in mind predisposing factors such as trauma, venous stasis or lymphatic stasis in the area as well as conditions, which cause them. Non infectious causes of cellulitis should be also taken into account. These include carcinoma erysipelatoides or other metastatic cancers to the skin, erysipelas-like erythema of familial mediterranean fever, Sweet's syndrome, also known as acute febrile neutrophilic dermatosis, and eosinophilic cellulitis (Wells' syndrome). Breast cancer should also be included in the differential diagnosis of this patient as well as hematologic and lymphatic malignancies known for skin manifestations (such as Non-Hodgkin lymphoma subtypes). Conditions such as compartment syndrome, giant urticaria, allergic contact dermatitis and fixed drug eruption could look the same as the patient's lesion but are non compatible with patient's history.

Diagnosis

We provided a seven-day intravenous treatment with clindamycin 600 mg every 8 hours and moxifloxacin 400 mg every 12 hours, which did not lead to any improvement of the cellulitis. A CT scan of the chest showed enlarged lymph nodes in the left axilla, a few enlarged lymph nodes in the right axilla and a pathological enlargement of lymph nodes in the upper anterior mediastinum above the carina. No parenchymal lesions of the lungs were found. Finally, a CT scan of the abdomen revealed mild degree of hepatomegaly,borderline size of the left paraaortic lymph nodes and enlarged left inguinal and left iliac lymph nodes.

The mass from the left axilla was removed. The microscopic examination showed the parenchyma of the lymph node having disruption of the architecture due to the development of a malignant lymphoproliferative disease.

The findings were conclusive for unspecified, diffuse, large cell type, peripheral T-cell lymphoma.

Therapy

The patient received follow-up care and the diagnosis of T-cell lymphoma was confirmed by re-examination of the last biopsy slides. Significant improvement of his cellulitis was noted with the initial doses of the administered chemotherapy regimen.

Teaching points

- Skin lesions of different morphologies, including papules, nodules, plaques, or masses, appearing especially in young and middle aged people, which are unresponsive to commonly provided treatment regimens (such as antifungal, antibacterial, steroid and anti-inflammatory agents) are proven sometimes to be due to lymphoma. Although the literature has a few reports about such lesions, we found only one report of cellulitis due to lymphoma [1].
- Three to five per cent of all NHLs are categorized as primary cutaneous NHL, where manifestations are limited to the skin, without extracutaneous involvement at the time of presentation [2].
- Occasionally, lymphoma destructs the architecture of a lymph node to the degree that histological examination does not reveal any lymph node- reminiscent tissue, or even reveals tissue resembling inflammatory lesion [3] just like in the first biopsy of our patient.

Reference List

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- A review paper written by our group regarding non-infectious causes of cellulitis is in print in the Annals of Internal Medicine [Falagas ME, Vergidis PI. Diseases that masquerade as infectious cellulitis. Ann Intern Med 2004 (in print)].