Polyarteritis nodosa and Sjögren's syndrome: overlap syndrome

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Abstract Polyarteritis nodosa (PAN) belongs to a group of necrotic angiitis. During the illness, necrotic changes are found in small and middle dimensions arteries. Primary Sjögren's syndrome is a chronic, autoimmuneological systematic illness of connective tissue with characteristic infiltration of lymphocytes and plasmatic cells in endocrine glands. Despite the fact that both disease entities are well known and primary Sjögren's syndrome is the second most commonly appearing autoimmuneological sickness, the coexistence of both simultaneously is described very rarely. So far only three such cases have been presented. The case of 53-year-old woman is presented, who since 2003 has been hospitalized due to her ailments several times, at surgery, internal medicine, and rheumatology wards. In 2006, she was admitted to rheumatology clinic of Pomeranian Medical University (PAM) to be diagnosed both subjectively and objectively. Additional examinations proved that she had been suffering from overlapping PAN and primary Sjögren's syndrome (PSS). She fulfilled 5 out of 10 criteria for PAN and all criteria for PSS. For treatment the boluses of methyloprednisolon and cyclophosphamid every 4 weeks were used what resulted in curing the patient.

Keywords Polyarteritis nodosa · Necrotic angiitis · Sjögren's syndrome · Overlap syndrome

Introduction

Polyarteritis nodosa belongs to a group of necrotic angiitis. During the illness, the necrotic changes are found in small and middle dimensions arteries. Primary Sjögren's syndrome (PSS) is a chronic, autoimmuneological, systematic illness of connective tissue with characteristic infiltration of lymphocytes and plasmatic cells in endocrine glands (especially in lacrimal and salivary glands) which leads to their malfunction. It occurs rather seldom i.e. 8 cases per 1 million inhabitants [1]. The cases of PSS in population differ from 0.6 to 3–4% depending on the diagnostic criteria [2, 3]. Despite the fact that both disease entities are well known and primary Sjögren's syndrome is the second most commonly appearing autoimmuneological sickness, the coexistence of both simultaneously is described very rarely. So far only four such cases have been presented [4–6].

The case

Since 2003, a woman aged 53 has been hospitalized several times at surgery, internal medicine, and rheumatologic wards due to her ailments. She had been complaining of power diminution, abdominal pains, pains in joints and muscles, headaches, loss of weight, dysaesthesia in lower limbs, xerostomia, and xeromycteria of both eyes. Hypertension and sensomotor polyneuropathy had been found out during her stays in hospital. Laboratory checks had shown the presence of following antibodies: antinuclear (ANA) and anti-Ro/SSA as well as the positive result of Schirmer's test; however, primary Sjögren's syndrome had not been diagnosed. No aneurysms or vessel's malformations had been discovered during angio-computer tomography of brain arteries. The pains in abdomen, the loss of weight,

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increased blood sedimentation rate (ESR > 45 mm/h), high concentration of C-reactive protein (CRP) 20 mg/dl, alanine aminotransferase (ALT) 114 U/l, aspartate aminotransferase (AST) 109 U/l, gammaglutamyltransferase (GGTP) 322 U/l, and alkaline phosphatase (Ap) 320 U/l were the cause of admittance to PAM gastroenterology clinic; in the course of which, the reasons of patients complaints were not discovered. However, the normalization of aminotransferases and decrease in Ap and GGTP concentrations were observed. Due to lasting abdominal pains and acroparaesthesia the patient was transferred in July 2006, after consultation, to rheumatology department with presumptive diagnosis of connective tissue illness.

During subjective examination the following symptoms were found: underweight, livedo reticulatae on the lower limbs' skin, painful palpation of epigastrium and intra-abdomen, manual impairment of both hands and the lack of strength in the right hand. Neurological examination showed the lack of both Achilles tendon reflexes and left knee reflex, strength reduction in right hand around elbow nerves and expansion symptoms in lower limbs. Additional checks revealed: Hb 9.7 g/dl, lymphopenia (800/mm³), increased ESR (60 mm/h), and high concentration of CRP (10.9 mg/dl). Concentrations of complement fraction (60.5 mg/dl) and C4 (below 1.5 mg/dl) were below normal values. Gammaglutamyltransferase exceeded the normal level twice. Total protein lower concentrations (5.1 g/dl) as well as albumins (49.19%) were noticed. There were no antigens (HBs), antibodies (HCV), antismooth muscles bodies (ASMA), and antimitochondrial antibodies (M2). Coagulation system checkup (INR- 0.96; APTT- 23.6 s; fibrinogen- 298 mg/dl), cholesterol balance checkup (HDL- 47 mg/dl; LDL- 79 mg/dl; TG- 109 mg/dl), carbohydrate metabolism (glycemia- 83 mg %) and kidney competence (creatinine- 0.5 mg %) proved to be normal. Antinuclear antibodies ANA (titer 1: 320 staining pattern type) were found as well as antibodies anti-Ro (SSA—4.3) anti-La (SSB—1.6) and rheumatoid factor of IgM class (RF—193 U/ml); however, cryoglobulins and immune complexes were absent. EMG showed sensomotor polyneuropathy of primary axonal type and features of fresh and massive lesion of right elbow nerve. The results of computer tomography (CT) of abdominal cavity with vessel option revealed 40% stenosis of right renal artery (Figs. 1, 2), 50% stenosis of superior mesenteric artery (Fig. 1) and 30% stenosis of left common iliac artery (Fig. 3).

In histopathological examination of gastrocnemius muscle's segment as well as in echocardiographical examination (ECHO), no valid changes from the norm were found. There were not noticed any activities of submandibular glands and only imparimental action of parotid glands in salivary glands' scintigraphy. In histopathological examination of lower lip salivary gland there was discovered

Fig. 1 CT examination: Stenosis of right renal artery in sagittal projection (marked with *white arrow*). Stenosis of superior mesenteric artery (marked with *dotted arrow*)

Fig. 2 CT examination: Same stenosis as in Fig. 1 in coronal projection

focal lymphoid infiltration and focal periductal fibroma—according to Greenspan IV°. The diagnosis was primary Sjögren's syndrome and PAN.

The treatment started with intravenous methylprednisolone in dose of 500 mg for 3 days and intravenous cyclophosphamide in dose of 0.6 g/m² of body surface 6 times in 4-week intervals with low molecular weight heparin, enalapril, amlodipine, spironolactone, venlafaxine and carbamazepine administered too. At present, the treatment is continued in 8-week intervals with the usage of prednisone 10 mg/d, low molecular weight heparin, hypotension drugs, carbamazepine and venlafaxine. Prophylaxis of osteoporosis and against alimentary tract complications is continued. After 8-month treatment the condition of the patient is

Fig. 3 CT examination: Stenosis of left common iliac artery. Calcification in the wall of aorta and in left common iliac artery

good. There is still hypertension but the symptoms of polyneuropathy are less visible though there has been muscular atrophy in both hands observed. Control EMG examination has shown slow regeneration process and beginning of reinnervation changes in checked muscles. Abdominal pains have disappeared and there is the gain of weight. In laboratory test there are still anemia (Hb 11.6 g/dl) and lymphopenia (700/mm³).

Discussion

On the basis of clinical and serologic criteria as well as of CT presented changes, the diagnosis of necrotic angiitis was decided upon. The patient has had 5 out of 10 criteria of PAN namely: loss of weight >4 kg, livedo reticularis, tenderness on deep palpation of muscles and muscles' strength reduction, polyneuropathy, increase in diastolic arterial blood pressure above 90 mm Hg as well as all criteria for recognition of primary Sjögren's syndrome [7, 8]. Despite the fact that both disease entities are well known, the coexistence of both simultaneously is described very rarely [4–6]. In most publications, the patients with primary Sjögren's syndrome and with skin angiitis, appearing during the basic sickness, are presented [5, 9]. There are few cases of nodule type necrotizing angiitis which do not, however, fulfill the criteria for polyarteritis nodosa diagnosis [9]. In presented case the patient had 5 criteria according to ACR used for diagnosis of polyarteritis nodosa. The results of angio-computer tomography confirmed that diagnosis despite the lack of micro aneurysms which would

increase the specificity of it [10]. The diagnosis was not confirmed also by histopathological examination of gastrocnemius muscle's segment but it is a well-known fact that the characteristic changes in the vascular walls of muscle segment appear only in 50% of patients with clinical ailments of muscular system [11]. Correct diagnosis—i.e. if angiitis or its symptoms, e.g. livedo reticularis or polyneuropathy, appear in primary Sjögren's syndrome or in polyarteritis nodosa—has a key role because it implies the proper therapeutic scheme, which influences the prognosis very much.

Conflict of interest statement None.

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