A Case Report on IgG4 Related Sacroiliitis

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Summary

We present a rare but important case of IgG4 related sacroiliitis in a 52 year old woman, diagnosed during the follow up for IgG4 related retroperitoneal fibrosis. IgG4 related disease is an autoimmune condition that affects different organs, but it is not usually known to affect sacroiliac joint. Review of English literature shows only one reported case of IgG4 related Sacroiliitis. Reporting of more such cases would help in better understanding the axial-arthritic manifestations of IgG4 related diseases.

IgG4 Related Sacroiliitis

A 52 year old Caucasian woman, with a chronic history of smoking and significant past medical history of hypertension and benign ovarian cyst presented with acute abdominal pain after a screening colonoscopy. A Computed Tomography (CT) scan done to evaluate the abdominal pain revealed a mass compressing the right ureter with significant right hydronephrosis. On detailed history patient noted the presence of intermittent night sweats for five years, a recent unintentional weight loss of 15 lbs., Raynaud’s phenomenon, malar rash and bilateral elbow joint pain. The mass was surgically removed. Biopsy of the mass compressing the right ureter was consistent with fibrosis and immunostaining showed focal areas of B lymphocytes, with no evidence of malignancy. IgG4 staining was not done for that biopsy. A diagnosis of Retroperitoneal Fibrosis (RPF) was made. Further testing was done to rule out secondary causes of RPF. She was not on medications such as beta-blocker, hydralazine, methyldopa, bromocriptine and ergotamine which are causes of RPF. She was not on medications such as beta-blocker, hydralazine, methyldopa, bromocriptine and ergotamine which are associated with RPF. Imaging of the chest (chest radiograph) and abdomen/pelvis (CT scan of abdomen/pelvis) did not show any lesions suggestive of malignancy. Serum protein electrophoresis did not show a monoclonal spike. Workups for infectious causes for RPF including histoplasmosis or tuberculosis were negative. She has no history of radiation to the pelvis. Autoimmune work up showed an elevated C-reactive protein (8.1 mg/dL) (normal range 0.0-0.8 mg/dL), antinuclear antibody (ANA 11.7 units) (normal <1.0) and elevated double stranded DNA antibody (dsDNA - 296 IU/mL) (normal - 0.29 IU/mL). Extractable nuclear antigen panel (Ribonucleic protein IgG antibody, anti-Smith antibody, SSA, SSB, scl-70 antibody) (normal) and rheumatoid factor were all within normal limits. An early brewing systemic lupus erythematosus with overlapping RPF was suspected. Patient was started on Hydroxychloroquine (HCQ) 400 mg daily and prednisone taper (40 mg/day for two weeks, 30 mg/day for two weeks, 20 mg/day for two weeks, 10 mg/day for two weeks). At two month follow-up visit, her night sweats disappeared but her musculoskeletal symptoms persisted. CT scan showed improvement in the size of the RPF mass. Patient was symptomatically stable for the next two years. Patient stopped HCQ as she was symptomatically doing well.

Two years later patient presented again with worsening of polyarthralgia and also had low back pain. Creatinine was mildly elevated (1.08 mg/dL) (normal 0.50 – 1.05 mg/dL) and CT scan of abdomen/pelvis showed progression of the RPF with right sided hydronephrosis and presacral soft tissue thickening. Subsequently patient underwent a distal ureterectomy and reimplantation. Pathology revealed cellular fibrosis in the soft tissue surrounding the ureter. Chronic inflammation, with germinal centers encircling small arteries and veins were noted. Definite arteritis or phlebitis was not seen. An IgG4 immunostaining highlighted numerous plasma cells of up to 80/high power field (hpf). Subsequent testing revealed elevated IgG4 in the serum 192 mg/dL (normal 11-86 mg/dL), elevated dsDNA (445 IU/mL) and markedly elevated serum creatinine (1.7 mg/dL). Complements and centromere antibody were in the normal range. At this point, a diagnosis of IgG4 related retroperitoneal fibrosis with overlap of possible systemic lupus erythematosus was made. MRI of lumbosacral spine done to evaluate sacroiliac pain and buttock pain (which was more on right side) showed extensive edema bilaterally in the region of the sacroiliac joints, right greater than the left, suggestive of bilateral sacroiliitis. There was no personal or family history of psoriasis, uveitis or inflammatory bowel disease that could be associated with sacroiliitis. No other etiology for sacroiliitis was found in this patient. Human Leukocyte Antigen (HLA) B27 gene test was positive. However, ankylosing spondylitis was not suspected in this patient because the onset of low back pain was not earlier than 45 years of age. Review of literature showed one case report of IgG4 related sacroiliitis reported recently. Our assessment was that the patient’s sacroiliitis was likely associated with underlying IgG4 related disease.

Patient was started on Mycophenolate Mofetil (MMF) 1000 mg (total) daily for two weeks followed by 2000 mg (total) daily) and prednisone taper (60 mg/day – one month, 40 mg/day one month, 30 mg/day - one month, 20 mg/day - one month, 10 mg/day - one month, 5 mg/day) with improvement of polyarthralgia. Sacroiliac pain improved after two months. On evaluation at the end of eight months, patient was on 2000 mg/day of MMF and prednisone was tapered off successfully. Patient was feeling great without any symptoms. Serum creatinine improved to 1.54 mg/dL. CT scan of abdomen/pelvis showed mild right hydronephrosis which was a marked improvement from the previous scans.

IgG4 related disease is an immune mediated condition that can affect different organs [1]. Multiple organ involvement is seen in 60-90% of patients [2]. Most commonly involved are the pancreas, major salivary glands (sialadenitis, salivary gland enlargement), lacrimal glands (lacrimal gland enlargement and proptosis), retroperitoneal fibrosis (periaortitis, ureteric involvement and hydronephrosis). IgG4 related sacroiliitis has not been reported previously except for an incidental diagnosis in a 60 year old woman [3], who presented with sicca syndrome, hearing loss, chronic sinusitis, and lacrimal gland enlargement. On biopsy, IgG4 immunostaining of the lacrimal gland was markedly positive. Following which staging of the disease using positron emission tomography CT showed increased fluorodeoxyglucose activity at sacroiliac joints bilaterally [4] even though the patient denied any back pain. A CT guided biopsy of sacroiliac joints...
confirmed the presence of >80 IgG4 positive cells/hpf [3]. In contrast, our patient was symptomatic with low back and sacroiliac pain. Even though HLA B27 gene was positive in our patient, the onset of low back pain was not earlier than 45 years of age as is usually seen in ankylosing spondylitis. Also, patient’s low back pain and sacroiliitis responded well to MMF which would not be expected in spondyloarthropathies. Positive response to MMF also favors our assessment that sacroiliitis is IgG4-related and not spondyloarthritis in this patient. HLA B27 is positive in about 8% of non-Hispanic white population [5]. It is unclear if presence of HLA B27 gene increases the risk of sacroiliitis in patients with IgG4 related disease. Sacroiliac joint biopsy was deferred in our patient as it was thought that a biopsy would not change the management. Our patient had elevated antibodies such as ANA and anti-dsDNA with overlapping borderline systemic lupus erythematosus in addition to the IgG4 related disease. Another case of overlap syndrome with IgG4 related disease and systemic lupus has been reported before [6].

To the best of our knowledge, this is the second reported case of IgG4 related sacroiliitis in English medical literature. There is a need for more cases of IgG4 related sacroiliitis to be reported in order to better understand the axial arthritic manifestations of IgG4 related disease.

References