Exceptional association of a variable common immune deficiency and ankylosing spondylitis: case report

Comment [AA1]: Common variable immunodeficiency

Comment [AA2]: a case report

Abstract :

We report a new observation of an exceptional association of CVID with ankylosing spondylitis (AS). Osteoarticular involvement associated with CVID occurs in around 5 to 40% of cases, most often in the form of septic arthritis, or non-septic arthritis, which is part of the joint manifestations of autoimmune and rheumatic diseases associated with CVID.A 53-year-old patient with a history of recurrent bronchopulmonary infections complicated by bronchial dilatation since the age of 38, as well as a pelvic-axial syndrome and peripheral inflammatory arthralgia affecting the large and medium-sized joints and enthesitis (talalgia), who, since the age of 40, has presented with a digestive disorder consisting of chronic liquid diarrhoea with 6 stools per day, evolving in a context of deterioration in general condition with no mention of medication.With regard to biotherapy, in particular anti-TNF alpha, this is the first-line biotherapy for APS. It has been shown to be effective in patients presenting with CVID with joint involvement in the course of granulomatous diseases, and this would be beneficial for our patient.

Comment [AA3]: Common Variable Immunodeficiency (CVID)

Comment [AA4]: Write in full

Keywords: ankylosing spondylitis, granulomatous diseases, immunoglobulins, autoimmune manifestations

Introduction:

Common variable immunodeficiency (CVID) is a rare condition. It is the most common constitutional humoral deficiency of CVID in adults, characterised by polymorphic manifestations, in particular a decrease in the serum concentration of most circulating immunoglobulins (Ig) and by the occurrence of recurrent bacterial infections, autoimmune manifestations, malignant tumours or malabsorption may be associated with it.

Osteoarticular involvement associated with CVID occurs in around 5 to 40% of cases, most often in the form of septic arthritis, or non-septic arthritis, which is part of the joint manifestations of autoimmune and rheumatic diseases associated with CVID. Bone involvement is less common.

The discovery of hypogammaglobulinemia during inflammatory rheumatism is a rare occurrence.

We report a new observation of an exceptional association of CVID with ankylosing spondylitis (AS)

Case presentation :

A 53-year-old patient with a history of recurrent bronchopulmonary infections complicated by bronchial dilatation since the age of 38, as well as a pelvic-axial syndrome and peripheral inflammatory arthralgia affecting the large and medium-sized joints and enthesitis (talalgia), who, since the age of 40, has presented with a digestive disorder consisting of chronic liquid diarrhoea with 6 stools per day, evolving in a context of deterioration in general condition with no mention of medication. On clinical examination, the patient was in fairly good general condition, with bilateral snoring and achromic patches on the anterior surfaces of both legs consistent with vitiligo. The paraclinical work-up revealed an inflammatory syndrome with a CRP of 27mg/l, and the CBC showed a hyperleukocytosis of 14400/mm3 with a predominance of PNN (70%). Stool tests for bacteria and parasites were negative. HIV serology was negative. Protein eletrophoresis showed significant hypogammaglobulinaemia at 0.6g/l, and low levels of IgG1 (<0.15), IgG2 (<0.02g/l) and IgA (<0.007g/l) on weight assay. Study of lymphocyte subpopulations showed no qualitative or quantitative abnormalities. Rheumatoid factor, AntiCCP and ANA were negative. IgG and igA anti-transglutaminase antibodies were negative, gastric fibroscopy and biopsy revealed partial duodenal villous atrophy, chest CT showed bilateral bronchial dilatation, HLA b27 was negative, and a CT scan of the sacroiliac joints revealed stage III bilateral sacroiliitis. The diagnosis of digestive CVID was accepted, with systemic autoimmune manifestations such as vitiligo associated with ankylosing spondylitis (AS).

Comment [AA5]: C-reactiveProtein

Comment [AA6]: Write in full

Comment [AA7]: Write in full

Comment [AA8]: Anti-nuclearantibodies

Comment [AA9]: Computedtomography

Treatment consisted of a monthly infusion of 0.8g/kg immunoglobulin, antibiotic prophylaxis and 5mg/d corticosteroid therapy, with good progression, particularly in the osteoarticular and digestive areas.

Discussion:

Primary immune deficiencies (PIDs) result from functional and/or quantitative abnormalities in one or more components of the immune system (T or B lymphocytes, natural killer cells, phagocytic cells, complement proteins, etc.). These PIDs are manifested by repeated infections, usually starting in childhood, but other clinical manifestations are also possible. Some are very specific and rare, while others are more frequent, in particular osteoarticular complications. These are caused by a wide variety of mechanisms, and are observed in different types of DIP, mainly humoral(1). The incidence of osteoarticular involvement in CVID ranges from 5 to 40% (2).

While bone manifestations are rare, arthritis is more common. These are arthralgias and quite often genuine septic but also aseptic arthritis, which may resemble rheumatoid arthritis but never ankylosing spondylitis(3).

The presence of hypogammaglobulinemia during inflammatory rheumatism is a relatively rare situation, which poses a diagnostic problem that is often difficult to resolve. In practice, several hypotheses have been put forward:

Either it is a case of inflammatory rheumatism complicated by an immune deficiency secondary to background treatment or corticosteroid therapy. This is generally the most common situation. However, this was not the case in our observation, as the patient had not previously received any treatment that caused CVID, and the diagnosis of spa was made at the same time as that of immune deficiency.

Comment [AA10]: Meaning???

Or it may be a genuine humoral DIP, but this is a rare or even exceptional situation because these arthropathies are not associated with enthesopathy and do not, apart from exceptional cases, progress to an APS picture and there was no established link with HLAb27(4).

Comment [AA11]: PID

Or, more rarely, it is a lymphoproliferative syndrome complicated by an immune deficiency revealed by joint manifestations.

This poses a real therapeutic problem when treating ankylosing spondylitis, We were reluctant to prescribe anti-inflammatory drugs because of the patient's digestive involvement, in order not to aggravate it.

Comment [AA12]: Don't youthink a low dosage of an NSAID underregulated conditions mightimprove the patient'soutcome, and reduce the inflammation?

Although corticosteroid therapy can induce moderate hypogammaglobulinemia, it was the only treatment the patient received that improved his joint damage at a rate of 5mg/d. It would appear that the infectious consequences are low (5).

Unlike immunosuppressive drugs such as methotrexate, which induce neutropenia and therefore indirectly bacterial infections.

With regard to biotherapy, in particular anti-TNF alpha, this is the first-line biotherapy for APS. It has been shown to be effective in patients presenting with CVID with joint involvement in the course of granulomatous diseases, and this would be beneficial for our patient. However, this type of treatment should be used with caution given the increase in infectious complications, the main one being reactivation of tuberculosis (6).

It is therefore preferable to remain cautious about the use of these therapies, provided that antibiotic prophylaxis has been initiated.

IVIg has been shown to be effective in the treatment of aseptic arthritis in patients with CVID, but there is no precise consensus on this. Furthermore, there is a lack of studies in the field of AS (7, 8).

Comment [AA13]: Intravenousimmunoglobulin (write in full)

Conclusion:

- The presence of hypogammaglobulinemia during inflammatory rheumatism is a relatively rare situation which poses a diagnostic problem that is often difficult to resolve and may be secondary to immunosuppressive treatments, which is not the case in our observation, the particularity of which was that it was a genuine CVID associated with AS never before cited in the literature.

- The problem arises above all with the therapeutic panel, which remains limited due to the risk of infection in patients predisposed to hypogammaglobulinemia.

Abreviations ; AS: ankylosing spondylitis

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Comment [AA14]: Year ?

Comment [AA15]: Is thereno recentreference ?

Comment [AA16]: Why are these in italics ?