World Journal of Gastroenterology

Online Submissions: http://www.wjgnet.com/esps/
wjg@wjgnet.com
doi:10.3748/wjg.v19.i35.5933

World J Gastroenterol 2013 September 21; 19(35): 5933-5935
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

CASE REPORT

Crohn's disease and Takayasu's arteritis: An uncommon association

Andrea Taddio, Massimo Maschio, Stefano Martelossi, Egidio Barbi, Alessandro Ventura

Andrea Taddio, Alessandro Ventura, Institute of Child Health, IRCCS "Burlo Garofolo", Trieste and University of Trieste, 341000 Trieste, Italy
Massimo Maschio, Stefano Martelossi, Egidio Barbi, Institute of Child Health, IRCCS "Burlo Garofolo", 341000 Trieste, Italy
Author contributions: Taddio A, Maschio M and Martelossi S acquired the data; Barbi E and Ventura A devised the concept of the paper; Taddio A, Maschio M and Martelossi S wrote the article; Barbi E and Ventura A revised it critically for important intellectual content; all authors approved the final version of the article.
Correspondence to: Andrea Taddio, MD, Institute of Child Health, IRCCS "Burlo Garofolo", Trieste and University of Trieste, Via dell'Istria 65/1, 34100 Trieste, Italy. ataddio@yahoo.it
Telephone: +39-40-3785312 Fax: +39-40-3785458
Received: March 2, 2013 Revised: April 11, 2013
Accepted: May 18, 2013
Published online: September 21, 2013

Abstract

Takayasu's arteritis (TA) and Crohn's disease (CD) are two rare autoimmune disorders; however some reports describe the presence of both diseases in the same patient. This finding has suggested the possibility that both diseases could share some common etiologic origin. We describe a case of a 13-year-old male affected by CD characterized by fever, diarrhea, weight loss, abdominal pain and elevation of inflammatory markers. Clinical and histological features from colonic specimens were consistent with CD. Treatment with steroids and azathioprine was started, however disease flared every time steroids were tapered. One year later, while still on treatment, he came back to our attention for dyspnea at rest and at night, tiredness and weakness. At physical examination a diastolic heart murmur was found as well as a left carotid artery bruit. A transthoracic echocardiography showed mild aortic valve insufficiency, left ventricular hypertrophy and a dilated ascending aorta with same findings at the aortic arch. A computed tomography scan showed abdominal aorta thickening, dilated thoracic aorta and the presence of a thoracic aortic aneurysm. TA associated with CD was diagnosed and medical treatment with cyclophosphamide, steroids and aminosalicylic acid was started, with good clinical response at 6 mo follow-up. We discuss the presence of possible common causes for the two diseases and the importance of differential diagnosis in those patients characterized for intractable disease.

Key words: Crohn's disease; Takayasu arteritis; Intractable inflammatory bowel disease; children; Treatment

Core tip: It is known that both Takayasu's arteritis (TA) and Crohn's disease (CD) can present together in the same patient although this association is considered extremely rare. We would like to underline the importance of considering an alternative diagnosis in those patients characterized by intractable diseases; in our case, in fact, an intractable CD masked TA and the patient did not achieve clinical remission until he was treated with major immunosupressive therapy; a treatment which can not be considered a standard protocol for CD.

Taddio A, Maschio M, Martelossi S, Barbi E, Ventura A. Crohn's disease and Takayasu's arteritis: An uncommon association. *World J Gastroenterol* 2013; 19(35): 5933-5935 Available from: URL: http://www.wjgnet.com/1007-9327/full/v19/i35/5933.htm DOI: http://dx.doi.org/10.3748/wjg.v19.i35.5933

INTRODUCTION

Takayasu's arteritis (TA) is a rare, chronic, relapsing large vessel vasculitis affecting the aorta and its major branches, and presenting manifestations include fatigue, weight loss, hypertension, headaches, strokes, and ischemic abdominal pain. Absence of peripheral pulses has given it the name "pulseless disease". Crohn's disease (CD)

is an idiopathic, chronic, relapsing transmural inflammation affecting primarily the gastrointestinal mucosa. The inflammatory process tends to be eccentric and segmental, often with skipped areas (normal regions of bowel between inflamed areas). Both diseases can be considered rare: in the United States, the reported incidence of pediatric CD is 4.56/100000 and the pediatric prevalence is 43/100000[1]; while the incidence of TA is almost 1 case per million. However there are some reports describing the presence of the two conditions in the same patient. It occurs usually during adulthood, while in children this association is extremely rare, but almost 1 in 10 patients with TA may develop CD or CD-like colitis.

Herein we describe the case of a child initially diagnosed as having CD who then presented with TA as well.

CASE REPORT

A 13-year-old-boy presented with a 3 mo history of fever, diarrhea, weight loss and abdominal pain. Laboratory examination revealed elevation of inflammatory markers (erythrocyte sedimentation rate: 110 mm/h; C-reactive protein: 12.5 mg/dL) with microcytic anemia (Hb: 9.2 gr/dL; mean corpuscular volume 68 fl).

Abdominal ultrasound showed an increased terminal ileum wall thickness, while colonoscopy presented linear and aphthous ulcers with some areas of cobblestone mucosa. A biopsy showed the presence of basal plasmacytosis, an increase of lamina propria cellularity (round cells and neutrophils), basal lymphoid aggregates and epithelioid granuloma.

Clinical and histological features were consistent with CD

Treatment with steroids and azathioprine was started, however disease flared every time steroids were tapered. One year later, while still on treatment, he came back to our attention for a clinical picture characterized by dyspnea at rest and at night, with extreme tiredness and weakness. At physical examination a diastolic heart murmur was found as well as a left carotid artery bruit. Transthoracic echocardiography showed mild aortic valve insufficiency, left ventricular hypertrophy and a dilated ascending aorta with same findings at the aortic arch. A computed tomography scan showed abdominal aorta thickening, a dilated thoracic aorta and the presence of a thoracic aortic aneurysm. TA associated with CD was diagnosed and medical treatment with cyclophosphamide, steroids and aminosalicylic acid (ASA) was started with good clinical response at 6 mo follow-up.

DISCUSSION

Although TA is a form of vasculitis that chiefly affects the aorta and its major branches, systemic features such as weight loss, fevers, and fatigue are found in 42%-83% of children at diagnosis of active TA[2]. At the same time musculoskeletal disease, including arthritis, arthralgia, and myalgia, is present in 12%-65% of children as well as skin manifestations, lymphadenopathy posterior reversible encephalopathy syndrome, keratouveitis, bilateral ocular ischemic syndrome and relapsing polychondritis[2].

TA-associated diseases also include pyoderma gangrenosum, ankylosing spondylitis, juvenile rheumatoid arthritis and inflammatory bowel disease[2]. TA in patients with CD was first described in 1970[3], but co-existence of TA and CD has been reported in the following years[4] even if mostly in adulthood, while its presence in childhood is considered extremely rare. The expected prevalence of CD in patients with TA, if present by chance alone, is approximately 0.05%-0.2%. Thus it has been suggested that this unexpected association is more than just a coincidence[5].

Although the pathogenesis of both diseases remains unclear some similarities have been found. Pro-inflammatory cytokines such as tumor necrosis factor (TNF)-α, are common in both and anti-TNF-α monoclonal antibody is an effective therapeutic agent for both TA and CD suggesting the presence of a common inflammatory pathway[5]. In addition, the presence of granulomatous vasculitis was found in 15 out of 25 patients affected by CD[6]; on the other hand the vasculitis of TA is characterized by granulomatous inflammation characterized by transmural inflammation of portions of the arterial wall (including the elastic laminae) and granulomas containing multinucleated histiocytic and foreign body giant cells, histiocytes, lymphocytes (which are predominantly $CD4^+$ T cells), and some plasma cells with fibroblasts[7]. Clinical details of 21 reported cases of TA associated with CD[5,8] showed that CD preceded TA in 13 reported cases as seen in the present patient. In these cases TA developed while being treated with corticosteroids, azathioprine and/or disease modifying drugs, such as 5-ASA, irrespective of the activity of CD and in one case also during infliximab treatment.

We present the interesting case of a patient affected by TA arising some months after CD. Although the exact mechanisms underlying the coexistence of the two diseases is not clear, it seems unlikely that coincidence could account for the simultaneous occurrence of these rare diseases, but the data are insufficient to allow for certainty. As explained above, it seems that a granulomatous inflammation may be considered a final method of development for many different conditions like TA and CD; however chronic granulomatous disease (CGD), Behcet disease or interleukin 17 deficiency may present with the same histological features. On this basis we could speculate that in these patients, inflammatory bowel disease could be considered an intestinal involvement of TA, rather than the coexistence of two different clinical conditions. Unfortunately there are no data on intestinal specimens in patients affected by TA and it is not clear if TA could be considered, in these cases, an extra-intestinal involvement of CD. In addition we would like to underline the importance of considering an alternative diagnosis in those patients affected by CD who do not respond to conventional treatment. In these cases, it is mandatory to rule out the presence of CGD, Behcet disease or TA.

REFERENCES

1 **Bernstein CN**, Blanchard JF. The epidemiology of Crohn's disease. *Gastroenterology* 1999; **116**: 1503-1504 [PMID: 10391739 DOI: 10.1016/S0016-5085(99)70522-6]

2 **Cassidy JT**, Petty RE, Lindsley CB, Laxer RM. Periodic fever syndromes in children. Textbook of pediatric rheumatology. 5th ed. Elsevier: Philadelphia, 2005: 657-690

3 **Soloway M**, Moir TW, Linton DS. Takayasu's arteritis. Report of a case with unusual findings. *Am J Cardiol* 1970; **25**: 258-263 [PMID: 5413198 DOI: 10.1016/0002-9149(70)90588-6]

4 **Owyang C**, Miller LJ, Lie JT, Fleming CR. Takayasu's arteritis in Crohn's disease. *Gastroenterology* 1979; **76**: 825-828 [PMID: 33869]

5 **Reny JL**, Paul JF, Lefèbvre C, Champion K, Emmerich J, Blétry O, Piette JC, Fiessinger JN. Association of Takayasu's arteritis and Crohn's disease. Results of a study on 44 Takayasu patients and review of the literature. *Ann Med Interne* (Paris) 2003; **154**: 85-90 [PMID: 12746644]

6 **Wakefield AJ**, Sankey EA, Dhillon AP, Sawyerr AM, More L, Sim R, Pittilo RM, Rowles PM, Hudson M, Lewis AA. Granulomatous vasculitis in Crohn's disease. *Gastroenterology* 1991; **100**: 1279-1287 [PMID: 2013373 DOI: 10.1007/978-94-009-0371-5_5]

7 **Weyand CM**, Goronzy JJ. Medium- and large-vessel vasculitis. *N Engl J Med* 2003; **349**: 160-169 [PMID: 12853590 DOI: 10.1056/NEJMra022694]

8 **Katoh N**, Kubota M, Shimojima Y, Ishii W, Matsuda M, Akamatsu T, Ikeda S. Takayasu's arteritis in a patient with Crohn's disease: an unexpected association during infliximab therapy. *Intern Med* 2010; **49**: 179-182 [PMID: 20075586 DOI: 10.2169/internalmedicine.49.2491]

P- Reviewer Gupta C **S- Editor** Zhai HH **L- Editor** O'Neill M **E- Editor** Li JY

百世登
Baishideng®

Published by **Baishideng Publishing Group Co., Limited**
Flat C, 23/F., Lucky Plaza,
315-321 Lockhart Road, Wan Chai, Hong Kong, China
Fax: +852-65557188
Telephone: +852-31779906
E-mail: bpgoffice@wjgnet.com
http://www.wjgnet.com

ISSN 1007-9327

9 771007 932045 35>