

Case report

Open Access

Takayasu's arteritis associated with Crohn's disease: a case report

Nasser E Daryani^{†1}, Atoosa Nayer Habibi^{*†2}, Mohammad Bashashati^{†2},
Mohammad Reza Keramati², Moezedin Javad Rafiee^{†3}, Hossein Ajdarkosh^{†4}
and Mehrdad Azmi^{†5}

Address: ¹Department of Gastroenterology, Imam Khomeini Hospital, Tehran University of Medical Sciences, Iran, ²Researcher of Gastroenterology, Imam Khomeini Hospital, Tehran University of Medical Sciences, Iran, ³Babak Imaging Center, Tehran, Iran, ⁴Department of Gastroenterology, Haft-e-Tir Hospital, Iran University of Medical Sciences, Iran and ⁵Cancer Institute of Imam Khomeini Hospital, Tehran University of Medical Sciences, Iran

Email: Nasser E Daryani - nebrahim@sina.tums.ac.ir; Atoosa Nayer Habibi* - anavery70@yahoo.com;
Mohammad Bashashati - bashashati_md@yahoo.com; Mohammad Reza Keramati - dr_morezak@yahoo.com;
Moezedin Javad Rafiee - ajdarkosh1345@yahoo.com; Hossein Ajdarkosh - ajdarkosh1345@yahoo.com;
Mehrdad Azmi - mehrdad_azmi@hotmail.com

* Corresponding author †Equal contributors

Published: 19 March 2008

Received: 30 April 2007

Journal of Medical Case Reports 2008, **2**:87 doi:10.1186/1752-1947-2-87

Accepted: 19 March 2008

This article is available from: <http://www.jmedicalcasereports.com/content/2/1/87>

© 2008 Daryani et al; licensee BioMed Central Ltd.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Introduction: The simultaneous presence of Takayasu's arteritis and Crohn's disease in a patient seems to be rare. To our knowledge, no patient with the combination of Crohn's disease and Takayasu's arteritis has been reported from our region.

Case presentation: Herein we present the case of a 22-year-old Iranian woman previously diagnosed as Crohn's disease and who had subsequently developed Takayasu's arteritis.

Conclusion: Clinical suspicion, proper imaging, and consideration of the differential diagnosis are important for the correct diagnosis and management of patients with this coincidence.

Introduction

Coincidence of Takayasu's arteritis (TA) and Crohn's disease (CD) is exceedingly rare and raises questions about the possibility of similar causes or etiopathogenic mechanisms [1]. The chance of both diseases occurring in the same individual has been estimated to be one in 1010 persons [2]. Recent studies have revealed that 3–9 percent of people with TA may also have CD [2-4]. To our knowledge, there have no reports of simultaneous presence of CD and TA in a patient from our region. Herein we present a case of an Iranian woman previously diagnosed with CD and who subsequently developed TA.

Case presentation

This patient is a 22-year-old woman with 2 and a half year history of CD who has been treated with sulfasalazine and azathioprine since diagnosis. The diagnosis of CD had been established by colonoscopy which showed regional inflammation and ulceration in the sigmoid colon and the proximal part of the ascending colon. Histology revealed granulomatous colitis, inflamed mucosa of the large intestine with inflammatory epithelial damage, and focal mild crypt distortion. Barium meal and small bowel follow-through were normal.

Since her diagnosis of CD, she has had episodes of relapse with symptoms including fever, weight loss, diarrhoea

and arthralgia in the form of inflammatory monoarthritis of the ankle.

Recently the patient presented with symptoms which were different from those seen in her previous relapses. She had malaise, weight loss (7 kg in 6 months), hematochezia and arthralgia, although this time both knees were affected symmetrically with an inflammatory pattern. On physical examination, the patient was afebrile with normal blood pressure. Both radial pulses were normal and symmetrical with a bruit heard over the abdominal aorta, but no carotid or clavicular bruits were detected.

Laboratory tests showed a considerable rise in ESR (100 mm/h) with white blood cell count, 7800/ μ L; hemoglobin, 10.0 grams/dl; platelets 500000/ μ L.

Colonoscopy revealed edematous mucosa and ulceration in the ascending colon without any other lesions in the rectosigmoid or other parts of the colon. Barium meal and small bowel follow-through were performed and showed no lesion in the oesophagus, stomach, or small intestine including the terminal ileum and cecum.

Abdominal CT scan showed thickening of the abdominal aorta (4 mm) and narrowing of renal arteries which was suggestive of TA (Figure 1).

To confirm the diagnosis of TA, a CT angiography was also done, which showed marked circumferential mural thickening in branches of the thoracic aortic arch (left common carotid artery and subclavian arteries), right innominate artery, aortic arch and descending aorta which was con-

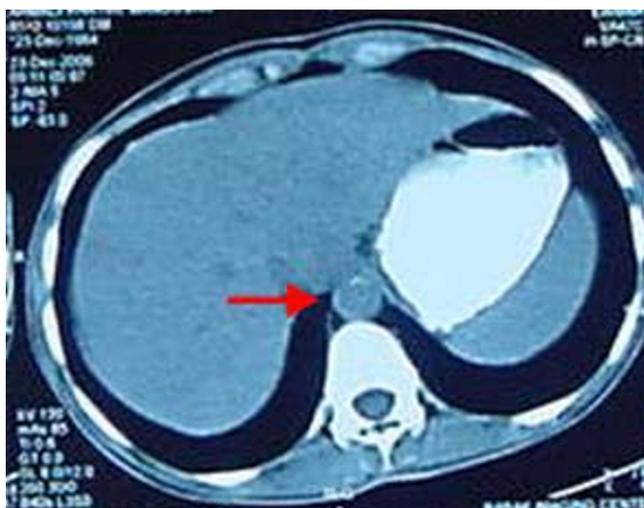


Figure 1
Abdominal CT scan: thickening of the aortic wall (arrow).

sistent with Takayasu's arteritis (type v, diffuse involvement) (Figure 2).

With the diagnosis of Takayasu's arteritis, in association with Crohn's disease, oral prednisolone (30 mg/day) was started plus continuation of her previous medication, i.e. sulfasalazine (3 g/day) and azathioprine (100 mg/day). She became symptomless after 4 weeks of treatment, at which time the prednisolone dose was tapered and discontinued over 8 weeks. Her treatment was continued with sulfasalazine and azathioprine with dosage of 3 g and 100 mg per day respectively. Five months after discontinuing prednisolone she has remained symptomless with a normal ESR.

Discussion

The first reported case of concomitant occurrence of inflammatory bowel disease (IBD) and Takayasu arteritis was in a 35-year-old woman with ulcerative colitis (UC) in 1991 [5]. To our knowledge, 37 patients with UC and TA have been reported since then. In a literature review, 25 patients were reported with concomitant CD and TA. Although, TA rarely occurs in a concomitant manner, this should not be perceived as an unexpected association [3,4].

In our clinic, about 120 patients with CD were registered over a six year period, and the reported case was the first concomitant occurrence of CD and TA.

According to previous studies, Takayasu's arteritis mostly presents simultaneously or after presentation of CD. It is unlikely to precede CD manifestations. It seems that one disease triggers or worsens the other [2]. Unfortunately, there have been no prospective studies to prove this phenomenon.

Most of the reported patients with CD and TA were young women with early manifestations of TA [2,6]. As TA mostly presents in young women [7], it could be suggested that patients with inflammatory bowel diseases would show features of TA in the same age-sex pattern of the IBD.

TA mainly manifests with an absent radial pulse, fever, arthralgia, night sweats and myalgia [7], but in people with Crohn's Disease it may be clinically silent [2]. Due to the involvement of the aorta and its vasculature, TA may present with gastrointestinal bleeding [6]. Since most of these features may also be present in CD, there might be a diagnostic dilemma when there is presentation of both CD and TA.

HLA haplotypes (HLA-A25, B52, DW12, and DR2), and the involvement of immune complexes, and organ spe-



Figure 2
Thoracic CT angiography: thickening of the aortic wall (arrow).

cific antibodies have been reported [1,2,8,9]. However, no direct genetic link has been reported and further studies on these associations are recommended [2]. Granulomas and granulomatous vasculitis are seen in both CD and TA. Granulomatous vasculitis shows a common pathophysiology in both diseases [6]. Location of the lesion and sometimes the age of the patient, are two factors that can differentiate between TA and other forms of vasculitis which may coexist with CD, i.e. giant cell (temporal) arteritis is the most difficult vasculitis to distinct from TA but it primarily involves external carotid artery branches and mostly occurs after 50 years of age [10,11]. Moreover, TA can be distinguished from temporal arteritis by predominant lesions at the media-adventitia junction on pathological evaluation [9], although this is mostly impractical.

Corticosteroids are the mainstay of treatment in active TA, and cytotoxic agents are reserved for patients with steroid resistance or who experience relapse [7]. Anti-tumor necrosis factor (TNF) agents might be another treatment possibility [7,12]. Recently, a study which assessed the effect of azathioprine and prednisolone in combination on TA showed that this combination is effective in controlling systemic symptoms and disease activity [13]. Therefore, the drugs that are utilised to treat TA and CD are often the same. Although diagnosis of the diseases in combination may not make any obvious difference in an individual patient's treatment, early diagnosis is critical,

because TA can compromise intestinal vasculature and may present with gastrointestinal bleeding, complicating the diagnosis and perhaps exacerbating the clinical course of patients with IBD [6].

Conclusion

Takayasu's arteritis affects the aorta and its vasculature and may compromise intestinal vessels. Therefore, it may present with gastrointestinal bleeding and exacerbate the clinical course of patients with inflammatory bowel disease. Clinical suspicion, proper imaging, and consideration of the differential diagnosis are important for the correct diagnosis and management of patients with both Takayasu's arteritis and Crohn's disease.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

All authors contributed equally to this case report except for MRK who contributed on the revision of the manuscript

Consent

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References

- Houman MH, Doghri A, Boubaker J, Kchir MN, Mahdhaoui A, Filali A, Miled M: **Takayasu disease in Crohn disease: an exceptional association.** *Ann Gastroenterol Hepatol (Paris)* 1996, **31(6)**:337-40.
- Reny JL, Paul JF, Lefebvre C, Champion K, Emmerich J, Bletry 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.
- Hall S, Barr W, Lie JT, Stanson AW, Kazmier FJ, Hunder GG: **Takayasu arteritis. A study of 32 North American patients.** *Medicine* 1985, **64**:89-99.
- Kerr GS, Hallahan CW, Giordano J, Leavitt RY, Fauci AS, Rotten M, Hoffman GS: **Takayasu arteritis.** *Ann Intern Med* 1994, **120**:919-29.
- Klippel JH, Weyand CM, Wortmann RL: **Takayasu's arteritis.** In *Primer on the rheumatic diseases* 11th edition. Edited by: Klippel JH. Atlanta: Arthritis Foundation; 1991:294-5.
- Levitsky J, Harrison JR, Cohen RD: **Crohn's disease and Takayasu's arteritis.** *J Clin Gastroenterol* 2002, **34**:454-6.
- Mubashir Ahmed M, Wolf RE: **Takayasu Arteritis.** [<http://www.emedicine.com/MED/topic2232.htm>].
- Sato R, Sato Y, Ishikawa H, Oshima Y, Suzuki T, Watanabe S, Oyanagi H, Sekine K, Kondo Y, Miyata M, Obara K, Nishimaki T, Kasukawa R: **Takayasu's Disease Associated with Ulcerative Colitis.** *Intern Med* 1994, **33(12)**:759-763.
- Todini AR, Heinzmann MM, Antignani PL, Paiella ML: **Association between Takayasu's arteritis and Crohn's disease in two young women: case report.** *J Mal Vasc* 1999, **24**:373-6.
- Hunder GG: **Clinical features and diagnosis of Takayasu arteritis.** [<http://www.uptodate.com/home/index.html>].
- Hunder GG: **Classification of and approach to the vasculitides in adults.** [<http://www.uptodate.com/home/index.html>].
- Hoffman GS, Merkel PA, Brasington RD, Lenschow DJ, Liang P: **Anti-tumor necrosis factor therapy in patients with difficult to treat Takayasu arteritis.** *Arthritis Rheum* 2004, **50**:2296-304.

13. Valsakumar AK, Valappil UC, Jorapur V, Garg N, Nityanand S, Sinha N: **Role of immunosuppressive therapy on clinical, immunological, and angiographic outcome in active Takayasu's arteritis.** *J Rheumatol* 2003, **30**:1793-8.

Publish with **BioMed Central** and every scientist can read your work free of charge

"BioMed Central will be the most significant development for disseminating the results of biomedical research in our lifetime."

Sir Paul Nurse, Cancer Research UK

Your research papers will be:

- available free of charge to the entire biomedical community
- peer reviewed and published immediately upon acceptance
- cited in PubMed and archived on PubMed Central
- yours — you keep the copyright

Submit your manuscript here:
http://www.biomedcentral.com/info/publishing_adv.asp

