CASE REPORT AND LITERATURE REVIEW

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SUCCESSFUL INFLIXIMAB TREATMENT IN COGAN SYNDROME WITH CARDIAC COMPLICATIONS

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Abstract

Cogan's syndrome (CS) is a rare chronic autoimmune vasculitis that can have significant systemic consequences and progress with progressive and inflammatory eye (interstitial keratitis, scleritis, episcleritis, uveitis) and audiovestibular (sensorineural hearing loss, vertigo, tinnitus) involvement. Vasculitis is observed in approximately 15% of patients with CS and may present as aortitis, large-vessel vasculitis (Takayasu-like), moderate arteritis, or other vasculitic syndromes. In this case report, we present the development of severe aortic and mitral valve insufficiency in a patient diagnosed with CS who was admitted to the hospital with episcleritis and sensorineural hearing loss.

Keywords: Cogan's syndrome, episcleritis, infliximab, large-vessel vasculitis

INTRODUCTION

Cogan's syndrome (CS) is a rare chronic autoimmune vasculitis that can have significant systemic consequences and progress with progressive and inflammatory eye (interstitial keratitis, scleritis, episcleritis, uveitis) and audiovestibular (sensorineural hearing loss, vertigo, tinnitus) involvement (1). Vasculitis is observed in approximately 15% of patients with CS and may present as aortitis, large-vessel vasculitis (Takayasu-like), moderate arteritis, or other vasculitic syndromes.

In this case report, we present the development of severe aortic and mitral valve insufficiency in a patient diagnosed with CS who was admitted to the hospital with episcleritis and sensorineural hearing loss. Written and verbal consent was obtained from the patient and his relatives.

CASE REPORT

A 44-year-old female patient was admitted to our clinic with progressive bilateral sensorineural hearing loss and episcleritis for approximately two years. The patient had increased dyspnea, exertional dyspnea, and high acute-phase responses in recent years. In the patient's examination. Blood pressure was 140/90 mmHg, hear beat was 110 beats/min, and breath rate was 18 beats/min. Physical examination revealed no features other than a decrease in breath sounds in the right lung base. Cardiological examination of the patient revealed findings consistent with severe aortic and mitral valve insufficiency. CS was considered in the foreground in the patient. The patient's treatment was started with methylprednisolone at a dose of 0.5 mg/kg/day and methotrexate at a dose of 15 mg/week. Heart valve replacement was then performed via cardiovascular surgery because of severe valve insufficiency. Histopathological findings consistent with CS were also observed in the pathological examination of the aortic root (Figure 1 and 2). Because of the lack of adequate clinical and laboratory responses in the patient, whose cardiac function improved significantly during follow-up, azathioprine at a dose of 3 mg/kg/day was added to the treatment. Severe stenosis

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was found in the left renal artery during the evaluation of the patient who developed intermittent hypertensive attacks and continued acute phase elevation during follow-up. Infliximab (5 mg/kg/4 weeks) was added to the treatment regimen. Currently, the patient is still under treatment with infliximab to prevent disease relapse.

Tumor necrosis factor-alpha (TNFα) is a cytokine released during infection and inflammation. It is mainly produced by activated macrophages. However, other cell types have also been shown to produce TNFα at various stages of inflammation (2). Other cells known to produce TNFα include lymphocytes and even fibroblast and endothelial cells. In recent years, anti-TNFα drugs have been evaluated for systemic vasculitis and different results have been obtained. Disease Modifying Anti Rheumatic Drug (DMARD) treatments used with varying success rates include cyclophosphamide, methotrexate, cyclosporine, mycophenolate mofetil, and azathioprine (3,4). As biological DMARD treatments, infliximab therapy has an important potential therapeutic area when used in combination with corticosteroids. When the literature is reviewed, there are CS patients with severe systemic involvement treated with infliximab. Our patient had corticosteroid and methotrexate treatments until aortic insufficiency and cardiac surgery. Following aortic pathological evaluation, azathioprine and then infliximab were added to the patient's treatment. The patient's infliximab treatment was given every four weeks for a total of six months.

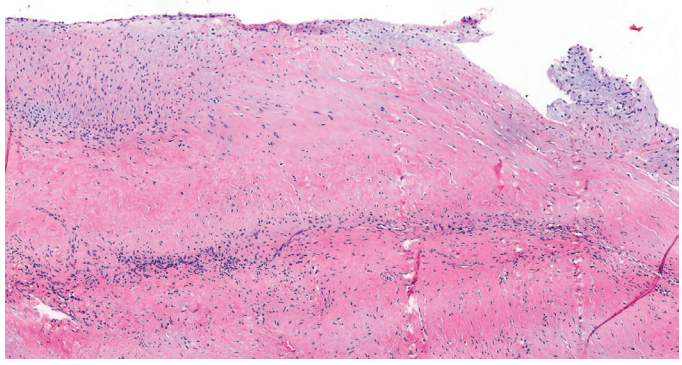

Figure 1. Mononuclear inflammatory cell infiltration, neovascularization, and myxoid degeneration

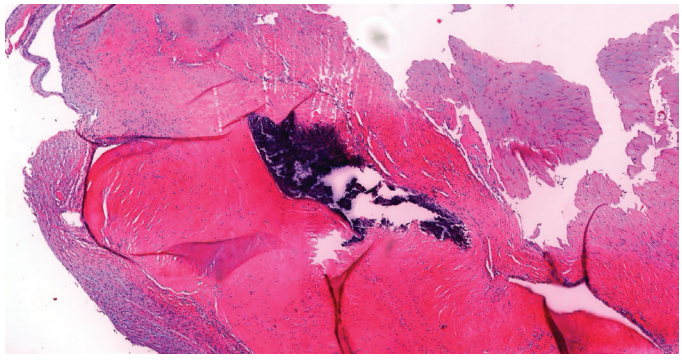

Figure 2. Hyalinization and calcification of the vascular intima media

In previous studies, aortic valve replacement was required in almost half of the patients diagnosed with CS. Permanent vascular damage can be prevented by early diagnosis of the disease and use of other immunosuppressive agents, in addition to high-dose systemic glucocorticoid therapy to be started urgently (5). Severe aortic insufficiency develops approximately 3 years after diagnosis (6). In the present case, the development of valve insufficiency requiring aortic and mitral valve replacement in the first two years after hearing loss, early diagnosis, and effectiveness of TNF inhibitor therapy in appropriate cases are emphasized (7,8).

Ethics

Informed Consent: Written and verbal consent was obtained from the patient and his relatives.

Authorship Contributions

Concept: S.G., M.Ç.G., D.G., Design: S.G., M.Ç.G., D.G., Data Collection or Processing: S.G., D.G., F.Ö., Analysis or Interpretation: M.Ç.G., D.G., F.Ö., Literature Search: D.G., Writing: S.G., F.Ö.

Conflict of Interest: The authors have no conflicts of interest to declare.

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REFERENCES

1. Iliescu DA, Timaru CM, Batras M, et al. Cogan's syndrome. Rom J Ophthalmol 2015;59:6-13.
2. Walsh LJ, Trinchieri G, Waldorf HA, et al. Human dermal mast cells contain and release tumor necrosis factor alpha, which induces endothelial leukocyte adhesion molecule 1. Proc Natl Acad Sci 1991;15;88:4220-4.
3. Sakano H, Harris JP. Emerging options in immune-mediated hearing loss. Laryngoscope Investig Otolaryngol 2019;4:102-8.
4. Padoan R, Cazzador D, Pendolino AL, et al. Cogan's syndrome: new therapeutic approaches in the biological era. Expert Opin Biol Ther 2019;19:781-8.
5. Hara K, Umeda M, Segawa K, et al. Atypical Cogan's syndrome mimicking giant cell arteritis successfully treated with early administration of tocilizumab. Intern Med 2022;61:1265-70.
6. Gasparovic H, Djuric Z, Bosnic D, et al. Aortic root vasculitis associated with Cogan's syndrome. Ann Thorac Surg 2011;92:340-1.
7. Espinoza GM, Wheeler J, Temprano KK, et al. Cogan's syndrome: clinical presentations and update on treatment. Curr Allergy Asthma Rep 2020;20:46.
8. Padoan R, Cazzador D, Pendolino AL, et al. Cogan's syndrome: new therapeutic approaches in the biological era. Expert Opin Biol Ther 2019;19:781-8.