ORBITAL IGG4-RELATED DISEASE WITH A TWIST OF HERPES ZOSTER OPHTHALMICUS: A RARE ENCOUNTER OF ATYPICAL PRESENTATION

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Abstract
IgG4 related orbital disease is a rare autoimmune condition characterized by lymphoplasmacytic infiltration of the orbit. Generally, presentation mimics a number of other orbital pathologies with symptoms of proptosis, painless (sometimes disfiguring swelling) and ophthalmoplegia.(1,2) We report a case of an atypical presentation of IgG4 related Orbital proptosis of a 55 year old man who had an episode of herpes zoster ophthalmicus 5 years ago on the same side. He presented with main complaints of disfigurement from a right inferior orbital mass.

Keywords: IGG4+ RD, Herpes Zoster Ophtalmicus, Orbital Mass

INTRODUCTION

IgG4 related disease (IgG4-RD)is a multi-organ lymphoproliferative disorder characterised by extensive infiltration of plasma cells and often elevated serum levels of IgG4 antibodies. It was first introduced in 2001 to be associated with sclerosing pancreatitis in Japanese population by Hamano et al.[1] The bigger challenge in its management is the exclusion of tumors and other pathologies to come to this diagnosis of exclusion.[3] and Treatment of the IgG4-RD includes glucocorticoids but long-term use can have dire consequences and may often cause pancreatic dysfunction.[4]

CASE PRESENTATION

A 55-year-old male presented with complaints of right-sided lower lid swelling which he first noticed 5 years ago, rapidly growing in the last 4 months. This swelling was concomitant with herpes zoster ophthalmicus that occurred 5 years ago, subsequently also leading to post herpetic neuralgia. On examination a 2.5 x 1.5 cm painless lower lid orbital mass with violaceous hue and nodular appearance was noted. BCVA was 6/9 in both eyes and apart from mild motility deficits; systemic and ocular examination was unremarkable. Patient did not report any episode of allergic rhinitis or asthma or renal issues.

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Chest X-ray and Mantoux test were done for evaluation of Tuberculosis and Sarcoidosis. Chest X-ray was insignificant except some mild pleural effusion. ECG showed a left bundle branch block and ultrasound abdomen and pelvis showed kidney stones. Blood investigations such as c-ANCA and p-ANCA were normal, serum IgG4 was in the upper limit of normal range, and markedly raised ESR and CRP. MRI orbit with contrast revealed nodular soft tissue thickening of the lower eyelid in inferno lateral periorbital region measuring 2.1x4.1x1.8 cm involving the cheek, extraconal compartment, lacrimal gland and intraorbital part of optic nerve.

SURGICAL MANAGEMENT and FOLLOW-UP

A subsidiary approach was adopted, and a white nodular mass was removed completely and sent for histopathology. The biopsy showed extensive lymphoid hyperplasia with IgG4 positive plasma cells. Stromal fibrosis was also noted. Immunohistochemistry was positive for numerous IgG4+ plasma cells. A diagnosis of IgG4 RD was made and the patient was started on 30 mg methylprednisolone in divided doses and Azathioprine 50 mg once daily for one week, later switched to 100mg in divided doses, with subsequent follow-up. Our patient is doing well and being followed up regularly with Ophthalmology and Medicine both.

DISCUSSION

IgG4-RD is a lymphoproliferative autoimmune disorder, with massive infiltration of organ systems with IgG4 positive plasma cells leading to storiform fibrosis and obliterating phlebitis. Majority of the patients are middle aged males(63%-83%).(5) In orbit, IgG4-RD can cause chronic lid swelling and proptosis. If the extraocular muscles or optic nerve are involved, restricted motility and visual disturbance can

occur, respectively. Lacrimal and salivary glands are also frequently involved in this condition.[6] IgG4-RD can also involve pleura, lung tissue, and mediastinum leading to nodules/mass. The main pathology involved in kidney related to IgG4-RD is tubulointerstitial nephritis and membranous glomerulonephritis.[7] It was concluded by Nagata et al that reactivation of Epstein Barr virus results in the production of IgG4 in a subset of Graves' disease.[8] Varicella-zoster virus, responsible for herpes zoster ophthalmicus, also belongs to the herpes group of viruses like Epstein Barr virus. To the author's knowledge, this is the first case of IgG4-RD associated with herpes zoster ophthalmicus. There is no specific criteria for the diagnosis of IgG4-RD. It was suggested in 2017 by Umehara et al to include infiltration >10 IgG4+ cells/hpf and an IgG4+/IgG4+ cell ratio > 40%, serum IgG4 levels of >135mg/dl and organ involvement.[9] Systemic corticosteroids are currently the first-line treatment.[10] Since the patients are mostly elderly and are at considerable risk for developing steroid-related side effects, steroids should be stopped within 3 years as reported by Kamisawa et al,2016.[11]
In relapses, immunomodulatory drugs like azathioprine have been deemed appropriate with Rituximab also being a good alternative.[11]

CONCLUSION

IgG4 RD is a rare chronic condition that causes fibroinflammatory disease. Orbital mass is sometimes the only manifestation of IgG4 related disease, a systemic condition that can have devastating consequences if not addressed promptly. Even though orbital symptoms need to be alleviated, a through work up is also important to address other organ systems affected by the condition. Its association with Herpes Zoster Opthalmicus has not been implicated in literature but keeping IgG4- RD on the differentials in such a scenario could encourage rapid diagnosis and treatment. However, further research is necessary before any solid connections can be confidently reported.

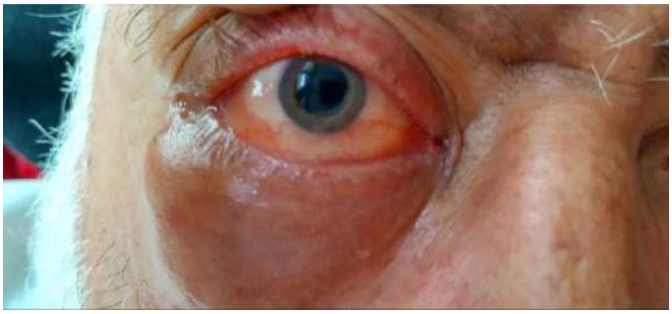

Figure 1: Right Inferior Orbital Mass

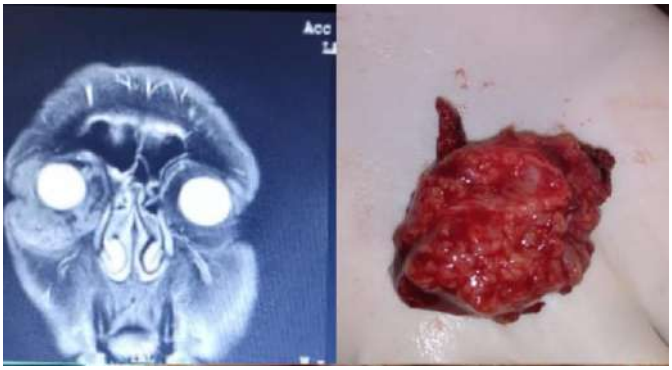

Figure 2- 2a: Contrast enhanced MRI orbit: Coronal section showing right sided nonspecific mass in inferior lateral orbit. 2b: Biopsy mass 30x20x12mm white fibrotic mass.

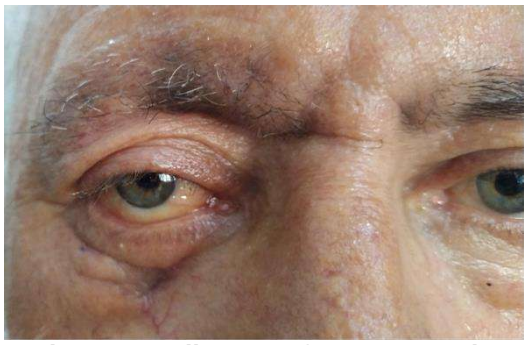

Figure 3: Follow-up after one month.

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