

EUROPEAN OPHTHALMIC PATHOLOGY SOCIETY
61th Annual Meeting

Date of Meeting: May 25th - May 28th, 2022

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Case number: 21rig008810

Allergic conjunctival granuloma presenting the Splendore-Hoepli Phenomenon

Clinical history:

A 46-year-old Caucasian female was referred to our department under the diagnosis of conjunctival lymphoma of the left eye. She was allergic to cat, pollens and dust and used fluticasonpropionat, budesonide and Formoterol turbobaler for her allergic rhinitis. There has been swelling of the mucous membranes in the head and neck region for 3 years. The patient has been suffering of allergic conjunctivitis for some months and there has been swelling of both eyelids for a few months. Slit lamp examination disclosed hyperaemia of both superior fornixes and on the left side, there was a lobulated red mass with whitish changes from 11-2 o'clock. The lesion is not sore, but adherent to the underlying structures. Besides this, the ophthalmological examination was normal. She works in the dental care. A conjunctival biopsy was performed. QuantiFERON-TB Gold test (QFT-G) whole-blood test diagnosing Mycobacterium tuberculosis infection was negative. Eosinophils was increased to 0.92 (normal range 0.01-0.50 E9/L). Blood testing for uveitis was negative. After the results of the conjunctival biopsy the patient was put on 30 mg prednisolone. The dosage was tapered with 5 mg each week. The conjunctival hyperaemia improved and on 10 mg the conjunctival conditions had normalized besides a yellow change superiorly in both fornixes.

Pathology:

Microscopical examination:

The conjunctiva was covered by a normal epithelium. The stroma was heavily inflamed with well-organized granulomas with central zones of eosinophilic granular material surrounded by thin, basophilic filamentous structures. Palisading epithelioid histiocytic cells and some multinucleated cells, around the necrotic zones were seen. Numerous histiocytic, plasma cells and eosinophils were observed.

Immunohistochemical examination:

The epithelioid cells were CD68 positive. The filamentous structures stain with Grocott and Gram staining. Ziehl-Neelson was negative. Cytokeratin staining was negative and CD 20 demonstrated B-lymphocytes.

PCR for mycobacteria strains:

Negative

DISCUSSION

The Splendore-Hoepli phenomenon (asteroid bodies) describes the unique local

mucocutaneous inflammatory process which is characterised by eosinophilic material surrounded by epithelioid histiocytes, multinucleated giant cells, lymphocytes and eosinophils (1-7). The Splendore-Hoepli phenomenon can be induced by infectious and non-infectious aetiologies. Infections such as bacteria, fungi and parasites and non-infectious conditions such as allergic conjunctival granuloma and hypereosinophilic syndromes or foreign bodies may induce the Splendore-Hoepli phenomenon (1-7). In the United States it is most frequently found in association with botryomycotic infections caused by *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

The Splendore-Hoepli phenomenon was first described by Splendore in 1908 describing the amorphous eosinophilic material around fungus spores (8). Later in 1932, Hoepli described a similar eosinophilic material around *Schistosoma* eggs (9).

The Splendore-Hoepli phenomenon is now considered to a reaction to an antigen-antibody precipitate and cellular debris (1-7).

The phenomenon can be seen in infectious and non-infectious lesions. Ashton and Cook looked at 22 cases and found a nematode in 4 cases (1). Völcker et al. (5) have reported 6 cases and Witschel and Sundmache (4) have reported three cases all without a microorganism. It can also be seen in allergic conjunctival granulomas and in most conjunctival lesions, where the definite causative agent cannot be identified.

The Splendore-Hoepli phenomenon has been clinically described as cream to yellow coloured nodules located deep to a hyperaemic bulbar conjunctiva. Similar lesions have been described in the eyelids and in the episclera. Most patients have no systemic illnesses except for occasional systemic eosinophilia (1-7).

The eosinophilic material seems to come from degranulated eosinophils where the material becomes incorporated in the eosinophilic growing material in the centre. Charcot-Leyden crystals can be seen.

Differential diagnoses includes actinomycotic sulfur granules, eosinophilic cellulitis (Well's syndrome), asteroid bodies in sarcoidosis, tophaceous lesions in gout, perivascular fibrin deposition and keratin granuloma.

The lesion has been reported to disappear by spontaneous resolution and excision also appears to be curative (1-7). Topical steroid have been reported not to be of benefit whereas cyclosporine has been reported to cure the lesion.

References

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