

## Imaging diagnosis

### Case 364

### 3. Pseudotumor

#### 【Progress】

He was introduced to university hospital for further diagnosis and management.

#### 【Discussion】

Extraocular muscles compose of superior rectus muscle, lateral rectus muscle, medial rectus muscle, inferior rectus muscle, superior oblique muscle and inferior oblique muscles. They make eyeball function upward movement, outward movement, inward movement, downward movement, downward plus outward, and upward plus outward, respectively (1-3). Optic nerve runs in the center of retro-eye-bulbar surface to collect image information depicted in the retina. Ophthalmic branch arteries supply optic nerve and extraocular muscles. Superior ophthalmic vein runs between superior rectus muscle and optic nerve, exits at the superior orbital fissure, and finally connects to cavernous sinus.

Swollen extraocular muscles occurs bilaterally in hyperthyroidism. Hemi lateral swollen eye occurs in vessel diseases such as ophthalmic vein thrombosis and cavernous arterio-venous fistula. These diseases are associated with venous congestion. Hemi lateral swollen eye occurs in pseudotumor (myositis, IgG related disease), sarcoidosis, granulomatous polyangiitis, and lymphoma (4). Pseudotumor, histologically composes of inflammatory cells of lymphocytes, monocytes and eosinophils. Sarcoidosis and granulomatous polyangiitis include granulation tissue plus inflammatory cell accumulation. Lymphoma indicates unregulated proliferation of lymphocytic cells (5).

Pseudotumor causes chemosis (edema of conjunctiva bulbi and/or palpebra) swollen lids, restriction of eyeball, and visual disturbance in hemi lateral eye. Swollen extraocular muscles and edema of conjunctiva bulbi and/or palpebra are depicted on face CT or MRI (4-6).

Pseudotumor is treated with steroid (corticoid) hormone. Radiation therapy is served in case of steroid resistant. Mechanism of steroid function for abating inflammation is not yet to be clarified. One mechanism is reported to block infiltration of immune cells from vascular pores (6).

In our case, swollen lateral rectus muscle and superior rectus muscle are depicted on CT, compatible with pseudotumor, leading introduction to university hospital for further investigation and management.

Ptosis occurs palsy of oculomotor nerves which innervate extraocular muscles. Lateral rectus muscle is innervated by abducent nerve, and superior plus inferior oblique muscles are innervated by trochlear nerve.

Ptosis occurs in aging, atrophic change of extraocular muscles or band between lateral rectus muscle and superior rectus muscle. Atrophy of band between them is reported to drop eyelid in 2013, called sagging eye syndrome (7). MRI and/or CT are useful to identify band atrophy between them.

### **【Summary】**

We presented a sixty-seven-year-old male with swollen right eye, hardly to open and visual disturbance. Swollen superior rectus muscle and lateral rectus muscle of right eye are depicted on face CT. It is borne in mind that swollen extraocular muscles are found in pseudotumor, sarcoidosis, granulomatous polyangiitis, and lymphoma. Atrophy of band between lateral rectus muscle and superior rectus muscle causes ptosis, called sagging eye syndrome.

### **【References】**

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2024.11.29