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Case Report

Scleral abscess following posterior subtenon triamcinolone acetonide injection for diabetic macular edema

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Abstract

A 65-year-old male with uncontrolled diabetes, received posterior subtenon triamcinolone (PST) injection in the right eye for diabetic macular edema. Two days following PST, he developed scleral abscess at the injection site. The Gram stain showed Gram positive cocci in clusters. He responded favorably with systemic control of diabetes, topical concentrated cefazolin, concentrated tobramycin, and intravenous antibiotics. Possibility of infective complications should be considered when using periocular steroids, especially in diabetics. Strict control of diabetes and aggressive systemic antibiotics favor rapid healing in such cases.

Keywords: DME, Diabetic retinopathy, Infective scleritis, Periocular infection, Subconjunctival abscess

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Introduction

Diabetic macular edema (DME) is the most common cause of visual impairment in patients with diabetes mellitus.[1] Posterior subtenon triamcinolone acetonide (PST) has been used effectively in DME, as primary treatment option,[2] as adjuvant to laser, and in refractory cases. It is devoid of most systemic side effects of steroids with good local delivery. We report a case of bacterial scleral abscess following PST injection for DME.

Case report

A 65-year-old diabetic male presented with redness and pain in right eye for 15 days. He had history of diabetes for 25 years and hypertension for 10 years. He received posterior subtenon triamcinolone acetonide (20 mg in 0.5 ml) injection for cystoid diabetic macular edema 17 days back. The injection was given by Nozik's technique with aseptic precaution using a 26G needle in superotemporal quadrant of right eye after proper consent. Topical moxifloxacin 0.5% drops were prescribed after PST in the right eye. The patient did not undergo any contact procedures including applanation tonometry or contact lens aided posterior segment laser on the same day. Best corrected visual acuity (BCVA) at presentation was 6/18 OD and 6/12 OS. Ocular motility was normal. There was a localized scleral abscess measuring 7 mm ∗ 5 mm with mucopurulent discharge at the site of PST on presentation (Fig. 1). There was no relative afferent pupillary defect OD. Both eyes were pseudophakic. In either eye, there was nonproliferative diabetic retinopathy with clinically significant macular edema. The central macular thickness (Cirrus HD-OCT, Carl Zeiss Meditec, Dublin, CA) was 331 micron OD and 333 micron OS. There was no history of pain,

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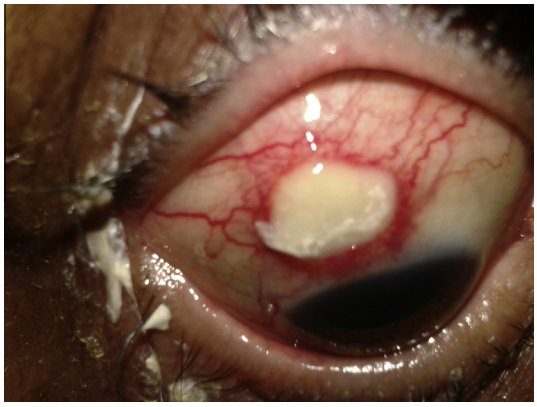

Figure 1. The scleral abscess was localized at the site of posterior subtenon triamcinolone.

redness, or discharge in the right eye before this episode. Clinically there was no evidence of previous scleritis, like scleral thinning. There was no punctal regurgitation in either eye on pressure over the lacrimal sac region. There was no history of topical or oral steroid use in the right eye. No history of systemic immunosuppression was present. There was no history of intravitreal injections or laser in the right eye. On presentation, hypertension was well controlled (Blood Pressure 130/76 mm of Hg) on oral medication and diabetes was poorly controlled (HbA_{1c} – 11.7%, Fasting Blood sugar – 369 mg/dl and Post Prandial blood sugar – 435 mg/dl on oral hypoglycemic agents). There was history of diabetic nephropathy; however, on presentation the kidney function tests were normal. We optimized diabetes control in consultation with the endocrinologist who started insulin. After sending the discharge for Gram stain, KOH stain and bacterial and fungal culture, the patient was started empirically on topical concentrated cefazolin 5% 1 hourly, topical tobramycin 1.3% 1 hourly, intravenous vancomycin 1 g twice daily, and intravenous ceftriaxone 2 g twice daily. The slough at the site of abscess was cleaned with sterile moist swab sticks daily. Within 2 days of this empirical therapy clinical improvement was noted, so we continued the same medications. The Gram stain showed Gram positive cocci in clusters, and KOH stain was negative. Both bacterial and fungal cultures failed to show any growth. After intravenous antibiotic therapy for 7 days, the patient was started on oral co-amoxiclav 625 mg thrice daily for 14 days. With these medications, the infective scleritis had resolved after 14 days.

Discussion

PST is an affordable and effective primary treatment option for DME especially with cystoid morphology.[3] Scleral abscess following PST in diabetic macular edema is a rarity. First such occurrence in DME was reported by Oh et al.[4] A 62-year-old woman who received PST injection and panretinal photocoagulation for DME with proliferative retinopathy, developed periocular abscess after one month. She developed atrophic bulbi despite long term systemic and topical itraconazole therapy. The causative agent was *Pseudallescheria boydii*. The second case, reported by Sukhija et al.,[5] was a 54-year-old female with poorly controlled diabetes. She developed orbital abscess due to Gram positive cocci, 3 days after PST and focal laser for DME. She responded to oral linezolid and topical moxifloxacin, with healed scar formation at 3 weeks. This was the first ever reported case of bacterial scleral abscess after PST in DME. Orbital abscess due to *Scedosporium apiospermum* has been reported 3 months after PST given for DME.[6] This case ultimately required pars plana vitrectomy for endophthalmitis with good visual recovery of 6/12. Orbital abscess following PST has been reported in cases of macular edema following branch retinal venous occlusion.[7] Scleral abscess has also been reported after PST in uveitis with cystoid macular edema.[8] Kusaka et al.,[9] reported orbital infection due to *Nocardia* species 2 weeks after PST in a case of Behcet disease. He was on systemic and topical steroids and had uncontrolled diabetes. Subconjunctival mycetoma due to *Exophiala jeanselmei* was noted by Galor et al.,[10] after 1 week of PST for age related macular degeneration. Steroids are known to promote bacterial and fungal infections especially in immunocompromised patients. Our case is the second reported case of presumed bacterial scleral abscess after PST injection in DME. In our case, most probably the causative organism was coagulase negative Staphylococcus (*Staphylococcus epidermidis*), which is a known commensal of the conjunctiva. The fungal orbital infections after PST present late and usually have grave prognosis unlike bacterial ones which present early and respond with proper antibiotic. The infections most likely occur due to commensals in conjunctiva in immunocompromised patients (eg. poorly controlled diabetes), and when PST is given in conjunction with laser. Systemic optimization with prompt initiation of aggressive therapy can yield good response in bacterial infections following PST. The risk of infection, bacterial or fungal following PST should be always kept in mind.

Conflict of interest

The authors declared that there is no conflict of interest.

Acknowledgment

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