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STEROID-INDUCED GLAUCOMA IN A 6-MONTH-OLD GIRL - case report.

Hajiyev R.V. MD PhD (Corresponding Author- rasim.gadjiev@gmail.com)
HAT Medicine Clinic, Baku, Azerbaijan

Abstract.

Steroids are a group of anti-inflammatory drugs, commonly used to treat ocular and systemic conditions. Unmonitored use of steroids especially in eye drop formulations is common in situations when it is easily available over-the-counter, resulting in undesirable side effects. Among the ocular side effects, cataract and glaucoma are common. Chronic administration of steroids in any form with raised IOP can cause optic neuropathy resulting in steroid-induced glaucoma[1,2,3].
Steroid-induced glaucoma is the most serious complication of the injudicious use of steroids, particularly among children affected by allergic conjunctivitis. This condition is steroid-dependent, and children are commonly being prescribed topical anti-inflammatories, including topical steroids, by general practitioners. Furthermore, topical steroids are also available over the counter, and this availability contributes to overuse without proper monitoring by an ophthalmologist [4,5].
Corticosteroid-induced IOP rise has been shown to occur with various methods of steroid administration, but is most identified as a complication of topical corticosteroid application with drugs such as dexamethasone or prednisolone. In responsive patients, the IOP typically rises after several weeks of continual corticosteroid therapy and returns to normal following cessation of such therapy [6].
Corticosteroid glaucoma often occurs in children undergoing treatment for vernal keratoconjunctivitis [7].
Corticosteroid-induced glaucoma is a well-recognized phenomenon in adults, but not in children. We describe an infant who developed juvenile glaucoma with buphthalmos while receiving topical steroid treatment. The intraocular pressure normalized several months following discontinuation of treatment.

Keywords: *glaucoma, ocular side effects, corticosteroids.*

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Case Report

The parents of an 8-month-old girl consulted an ophthalmologist with complaints of an increase in the size of both eyes, especially the right eye (Figure 1). According to the parents, 3 months ago, the child had signs of conjunctivitis, and the general practitioner prescribed antibiotic drops with corticosteroids. They periodically administered these drops for 3 months, after which an increase in the size of the eyes was observed. The drops were not administered for the last 3 weeks.

Figure 1. *Enlargement of the diameter of the right eye·s cornea*

The examination revealed a weak myopic refraction of 0.75 spherical dioptres and astigmatism of 0.75 cylindrical dioptres in both eyes. The intraocular pressure of the right eye was 15 mmHg, and that of the left eye was 14 mmHg. The optical media of the eyes were transparent.

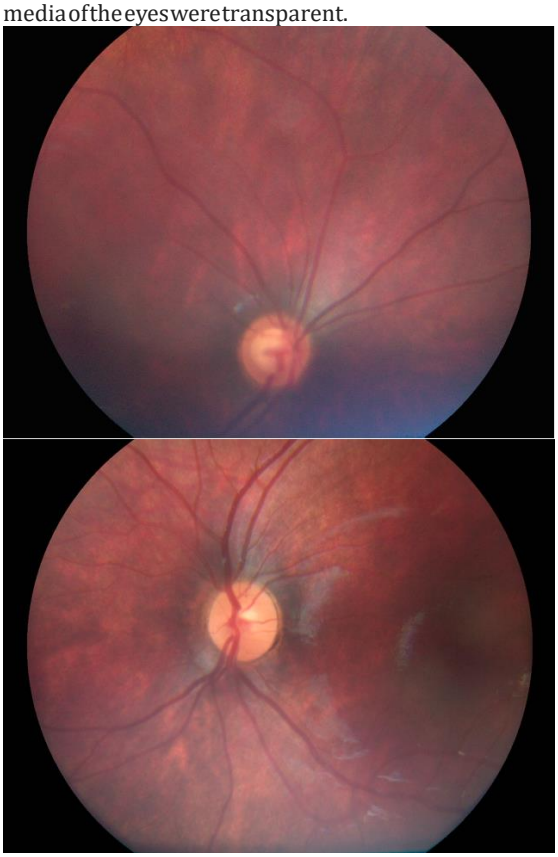

Figure 2. *Fundus photo of the right and left eye.*

Severe glaucomatous excavation was noted in the fundus of the right eye. There was a slight excavation on the left eye (Figure 2).

Figure 3. *Photo of a child before using corticosteroids*

The parents stated that 3 months ago, the size of the child's eyes was normal. They also provided a photo of the baby at 3 months (Figure 3).

Discussion

Congenital glaucoma is accompanied by macrocornea and buphthalmos [8]. Our case indicates that even topical use of corticosteroids in infants quickly leads to an increase in intraocular pressure and the occurrence of macrocornea. Timely withdrawal of corticosteroids leads to normalization of intraocular pressure.

Rare cases of the first model of megalocornea in children are associated with higher intraocular pressure that is still within the physiological norm in the late period of intrauterine development.

Model II megalocornea, also known as anterior megalophthalmos, X-linked megalocornea and macrocornea, is a rare bilateral nonprogressive birth defect that is characterized by an increase in corneal diameter greater than 12.5–13 mm at birth and a deep anterior chamber with normal intraocular pressure [9,10].

Corneal thinning is also often associated with macrocornea [11]. The defect is classified as an anterior segment dysgenesis and is associated with a number of other conditions, including Axenfeld-Rieger syndrome, Peters anomaly, primary congenital glaucoma, aniridia, congenital hereditary endothelial dystrophy, and sclerocornea. In addition, it is a component of many different congenital syndromes.

Buphthalmos develops in the early period of child development. The earlier topical corticosteroids are used, the faster buphthalmos occurs. The authors described a clinical case in which a 3- week-old child received topical corticosteroids. Buphthalmos occurred one week after topical corticosteroid application [12].

Steroid-induced glaucoma is the most serious complication of harmful steroid use, especially among children with allergic conjunctivitis. This condition is steroid dependent and children are usually prescribed topical anti-inflammatory drugs, including topical steroids, by general practitioners (GPs). Additionally, topical steroids are also available over the counter, and this availability encourages overuse without proper supervision by an ophthalmologist. Furthermore, topical steroids are also available over the counter, and this availability contributes to overuse without proper monitoring by an ophthalmologist. As many forms of cortico-steroids are widely used, children on corticosteroids should have regular intraocular pressure measurements as part of their management.

Conflict of interests

The author declares that there is no conflict of interests.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Study association

This study is not associated with any thesis or dissertation work.

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