A 19 year old with a bilateral posterior sub-capsular cataract (PSCC) induced by corticosteroid cream

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CASE
We present a case of a healthy 19 year old female on a three month follow-up to our clinic with a bilateral posterior sub-capsular cataract (PSCC) induced by a corticosteroid cream she used for one month due to her atopic dermatitis. All remaining medical history and systems review are normal. She is currently not on any medications. In her right (OD) eye her uncorrected vision (sc) is CF @ 4 ft, corrected vision (cc) is 20/40 and IOP is 12. In her left (OS) eye her uncorrected vision is 20/400, corrected vision (cc) is 20/70-2 and IOP is 13.

DISCUSSION
Cataract is the leading cause of blindness in the world. A cataract (from the Latin cataractus meaning waterfall) is defined as the clouding of the crystalline lens of the eye. In normal healthy humans, the lens of the eye is usually clear whereas a person with cataracts may have a lens varying from slight to complete opacity. Until the fourth decade of life, the lens is able to change its shape. This allows the lens to focus on near and far away objects. The lens focuses the light rays on the back of the eye and the light signal is transmitted to the brain via the optic nerve.

In normal humans since embryonic development and onwards the lens of the eyes produce specialized cells that are arranged in a specific and complex orientation. These cells in the lens of the eye are stratified epithelial cells that contain large amounts of cytoplasmic proteins. These proteins are called crystallins and are transparent. However, the lens is unique in the sense that they do not shed nonviable cells and so the "lens is susceptible to degenerative effects of aging on cell structure". And so subsequently with advanced aging of the lens, the lens becomes cloudy. This cloudiness or cataract can then obstruct the passage of light and in effect cause deviation from normal vision.

Factors that may lead to cataract formation are: advanced age, smoking, alcohol consumption, poor lifestyle habits (including malnutrition and physical inactivity), long-term exposure to ultraviolet light or radiation, congenital factors, surgical complications, corticosteroid drugs, and secondary effects of diseases such as diabetes, hypertension and trauma.

In the case presented, the cause of the cataracts was eye exposure to a corticosteroid cream used for atopic dermatitis. Corticosteroids are heavily used for treating localized and systemic inflammatory conditions in dermatology. The administration methods are usually topical, oral or inhaled. Corticosteroids affect a large spectrum of bodily systems and specifically may result in an early forming cataract and an increase in intra-ocular pressure (IOP), which is a risk factor for Glaucoma. With this in mind, corticosteroids should be prescribed with time spent on patient education and possible treatment complications.

The patient presented in this case was monitored for IOP, which was noted as stable and normal. However, she did develop a sub-capsular cataract, which is formed in the posterior portion of the lens. This type of cataract is "particularly visually disabling" as it is formed "nearest to the eye's focusing or nodal point". In terms of corticosteroid administration, "topical steroids have the most effect followed by oral/parenterally administered formulations". There is some research also suggesting that inhaled corticosteroids may lead to cataract formation as well.

In conclusion, though cataracts can be quite disabling and can significantly affect the quality of life of a patient, they do not damage the eye. With the technological advances in cataract surgery, cataract extraction can be successfully managed with an outpatient procedure. Patients are usually seeing a lot better within 24 hours. Considerations for surgery, risk factors, and options for intra-ocular lens, were discussed with our patient. In this case, the patient still had quite a bit of manageable vision and decided to watch and wait for now. A follow-up of 6 months was scheduled when her eyes will be reassessed and operated on if she agrees and meets the surgical indications. Indications for surgery would include difficulty with routine daily activities of living, school or driving.

REFERENCES
