

Anterior polar cataract



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Title figure:

Cataract removal in medieval times

(source: www.wikipedia.com)

CASE REPORT

This infant was born by normal vaginal delivery at term to a 37-year-old G1/P1. Pregnancy had been uncomplicated. The infant adapted well with Apgar scores of 9, 9 and 10 at 1, 5 and 10 minutes, respectively.

On day 3 of life, the routine newborn exam revealed a small central dark spot in each eye when the red reflexes were tested. The examining pediatrician felt that this finding might be compatible with a diagnosis of bilateral anterior polar cataracts. When this was explained to the parents, the father indicated that he also had a central opacification in his right eye. This could easily be confirmed by direct inspection and by ophthalmoscopy. The infant was referred to an ophthalmologist.

At the eye clinic, the diagnosis of bilateral anterior polar cataracts in the child was confirmed (central on the left side and slightly paracentral on the right side) (Fig. 1, 2). Examination of the father revealed a right-sided, relatively large anterior polar cataract (Fig. 3); the father also reported that there was a relevant visual impairment on that eye.

Given the small size in the infant, the cataracts were judged to be optically irrelevant at this point. Nevertheless, regular follow-up is planned to track the infant's visual development.



Fig. 1

Central anterior polar cataract in the patient's left eye.



Fig. 2

Paracentral anterior polar cataract in the patient's right eye.

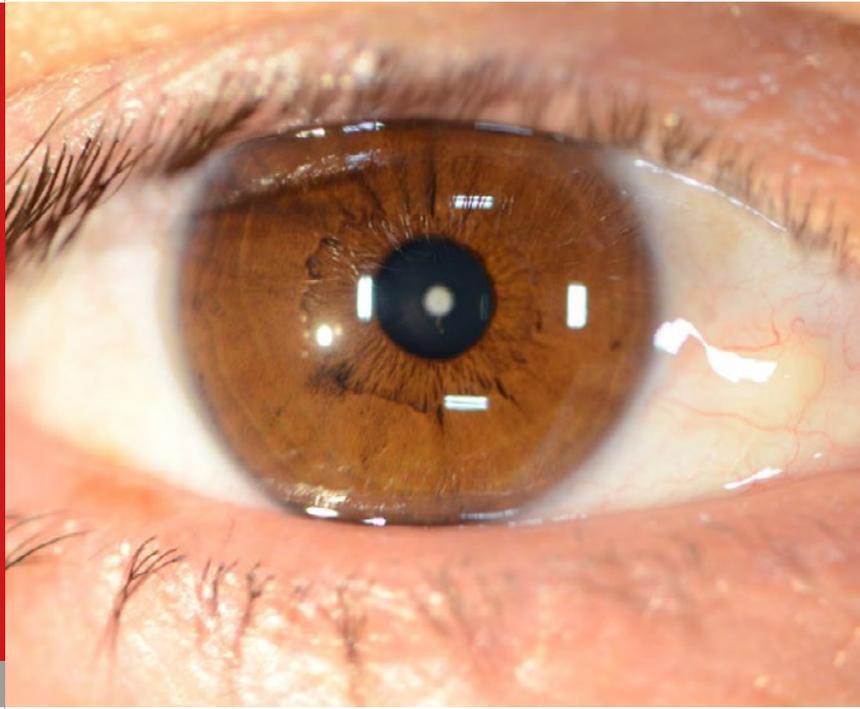


Fig. 3

Anterior polar cataract in the right eye of the patient's father.

DISCUSSION

The red reflex refers to the reddish-orange reflection of light from the back of the eye, observed when using an ophthalmoscope. The reflex relies on the transparency of optical media (tear film, cornea, aqueous humor, crystalline lens, vitreous humor) and reflects off the fundus back through media into the aperture of the ophthalmoscope. The red reflex is considered abnormal if there is any asymmetry between the eyes, dark spots, or a white reflex (leukocoria).

This is a recommended screening examination for neonates and children at every office visit. The objective is to detect ocular pathology that needs early intervention and ophthalmology referral to prevent visual abnormalities.

Anterior polar cataract is an opacity in the anterior capsule of the lens (Fig. 4). It is primarily considered a stationary condition. It can be uni- or bilateral. The condition has been associated with other eye diseases such as aniridia, microphthalmia, persistent pupillary membrane, anterior lenticonus, Peters' anomaly, retinoblastoma and systemic diseases. It is usually non-progressive and visually insignificant, but can be a highly amblyogenic condition not because of a visually obstructing lens but because of refractive errors, primarily hypermetropic anisometropia and astigmatism (1, 2).

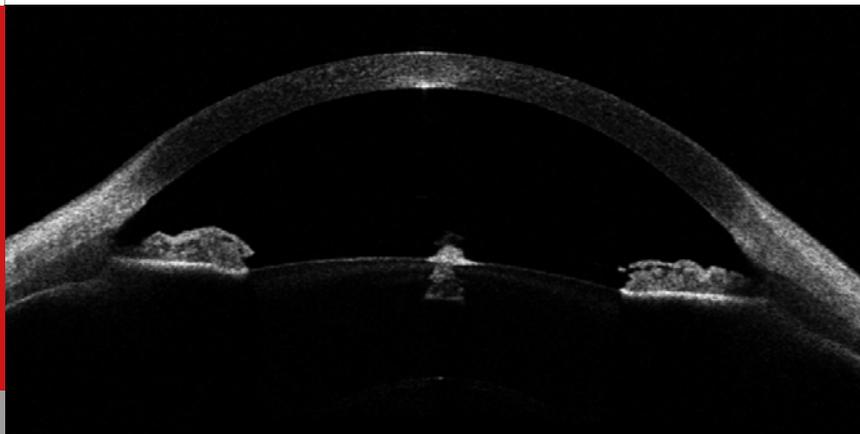


Fig. 4

Anterior segment optical coherence tomography showing a typical anterior polar cataract as a small excrescence on the anterior lens capsule with thin adherent iris strings (source: Rasul et al.).

In a Danish study, 54 patients with anterior polar cataracts were identified over a ten-year period (2007–2016). The average prevalence was estimated to be 2.2 per 10'000 newborn infants (1). The majority of children had unilateral anterior polar cataract (72 %); girls were significantly overrepresented (70 %). The prevalence of amblyopia was 55 % (27 eyes); it was treated with refractive correction and patching (16 eyes), refractive correction only (5 eyes) and patching only (5 eyes). Only 3 patients required cataract extraction.

Although most cases of anterior polar cataract seem to be sporadic, the condition may run in families. Ionides et al. described a family with autosomal dominant anterior polar cataract: among 30 family members examined, 19 were found to be affected (2). The same group had demonstrated linkage of an autosomal dominant anterior polar cataract to the short arm of chromosome 17 (3).

CONCLUSION

Looking for symmetric red light reflexes is a mandatory part of the newborn exam. Optimizing the conditions for examination is essential (baby not crying, turning off the lights). If any abnormalities are detected (asymmetric red reflexes, leukocoria, cataracts), referral to an ophthalmologist is recommended. Uni- or bilateral anterior polar cataracts are rare. They usually do not require cataract surgery. However, they are commonly associated with refractive errors which must be treated to avoid amblyopia.

REFERENCES

1. Rasul A, Kessel L. Prevalence of anterior polar cataracts in children and risk factors for amblyopia. *Acta Ophthalmol* 2019;97:486–490 (*Abstract*)
2. Jaafar MS, Robb RM. Congenital anterior polar cataract: a review of 63 cases. *Ophthalmology* 1984;91:249–254 (*Abstract*)
3. Ionides A, Berry V, Mackay D, Shiels A, Bhattacharya S, Moore A. Anterior polar cataract: clinical spectrum and genetic linkage in a single family. *Eye* 1998;12:224–226 (*Abstract*)
4. Berry V, Ionides ACW, Moore AT, Plant C, Bhattacharya SS, Shiels A. A locus for anterior polar cataract on chromosome 17p. *Hum Mol Genet* 1996;5:415–419 (*Abstract*)

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