



Plateau iris configuration secondary to iridociliary polycystosis

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ABSTRACT

*Introduction:*The plateau iris is an abnormal configuration of the iris and ciliary body. Ultrasound biomicroscopy (UBM) is a valuable aid for its diagnosis as well as for the determination of its primary or secondary character. We report the case of a plateau iris configuration secondary to iridociliary polycystosis. *Case report:*A 34 year-old male patient, with no family history of glaucoma, was seen in emergency for an angle closure glaucoma crisis (ACG) of the left eye. The dynamic gonioscopy of the adelphe eye showed a double bump appearance typical of the plateau iris configuration. A UBM examination was then performed and confirmed the diagnosis of plateau iris configuration secondary to bilateral iridociliary polycystosis. After control of the acute attack, the patient received a peripheral iridotomy for both eyes and his ocular tone was well balanced under monotherapy. *Discussions:*Primary iridociliary polycystic is one of the etiologies responsible for secondary plateau iris. The UBM is a valuable diagnostic aid because it gives a better analysis of the ciliary body and the structures behind the iris. *Conclusion:*Irido-ciliary polycystic disease may be responsible for acute ocular hypertonia by closing the angle. The UBM constitutes a major examination to confirm this diagnosis. Control of intraocular pressure can be achieved by monotherapy and YAG laser PI, avoiding areas with irido-ciliary cysts.

Keywords: Angle-closure glaucoma (ACG); Secondary iris plateau; UBM; Irido-ciliary polycysts; YAG laser Peripheral Iridotomy (PI).

INTRODUCTION

The plateau iris is an abnormality of the iris and the ciliary body configuration, which can lead to a closure of the angle with or without pupillary locking; (Root of the thickened iris and / or anterior insertion of the iris) or secondary to excessively large ciliary bodies (by anteposition, polycysts or tumor) [1, 2]

Ultrasound biomicroscopy (UBM) is a valuable aid for its diagnosis as well as for the determination of its primary or secondary character.

We report the case of a plateau iris configuration secondary to an iridociliary polycystosis.

MATERIAL AND METHODS

Case report:

A 34-year-old man from the Maghreb, with no family history of glaucoma, was seen in the emergency room for 34 mmHg ocular hypertonia, redness, pain and visual acuity drop of the left eye.

The visual acuity of the right eye was 10/10, where as that of the left eye was reduced: the patient was just able to count the fingers up close.

The biomicroscopic examination of the left eye showed an epithelial mist, retro-descemetic precipitates, a Tyndall two crosses, a normal depth anterior chamber at the center, all associated with an areflexic semi-mydriasis (Fig. 1). The gonioscopic examination was hampered by corneal edema, the cup / disc ratio was 6/10.

In the right eye, the ocular tone was at 14 mmHg, the anterior chamber was of normal depth at the center, the iris was flat to its periphery where it described a curve accentuated towards the back, the pupil was round and reactive.

Gonioscopy showed a grade 2 narrow iridocorneal angle and a double bump appearance after indentation, the cup / disc ratio was 4/10.

An automated Humphrey 24.2 perimetry, white-white in sita-standard strategy, did not show any anomalies in the right eye.

The hypothesis of a plateau iris was evoked before the double bump gonioscopic aspect. An UBM examination was then carried out. It confirmed the diagnosis of plateau iris secondary to bilateral iridociliary polycystosis (Fig. 2)

The left eye hypertonia was controlled by a hyperosmolar agent (intravenous Mannitol 20% after control of the blood ionogram), an oral carbonic anhydrase inhibitor (Acetazolamid 250), a beta blocker and a Myotic (pilocarpine 2%) eye drops.

This treatment was completed by the realization of a YAG laser peripheral iridotomy (PI) for both eyes (Fig. 3) in order to lift the pupillary block associated with the plateau iris.

The patient was then put under monotherapy (pilocarpine diluted to 0.1%), which normalized the intraocular pressure and improved the functional signs. The right eye remained asymptomatic with normal intraocular pressure.

RESULTS AND DISCUSSION

Discussion:

The plateau iris configuration is due to an anatomical abnormality of one or more structures of the anterior segment: increased thickness of the iris root or its peripheral angulation, insertion of the iris on the anterior ciliary body and voluminous and/or previously moved ciliary processes [3, 4, 5, 6, 7, 8].

According to some authors, there is no gender predilection [7], while for others there is a female

predominance [5, 9]. Patients are generally young (30-50 years) and less hypermetropic than those with isolated relative pupillary block. The axial length in our patient was 22 mm.

Clinically, the patient may be asymptomatic or have an acute attack of angle closure hypertonia.

The biomicroscopic signs of the plateau iris are suspected on a normal anterior chamber depth to the center (3.30 mm in our patient), the absence of peripheral irian bulge and a narrow or closed angle [10] The dynamic gonioscopy can typically show a dual bump or sine wave sign configuration [4,5,6].

The classification of the plateau iris depends on the degree of the anomaly of the irian root insertion. Ritch et al. have defined four stages:

- ☐ Stage A: the iris completely or almost completely masks the trabeculum to the schwalbe ring.
- ☐ Stage B: the iris masks the anterior trabeculum
- ☐ Stage C: the iris masks the posterior trabeculum
- ☐ Stage D: the iris plateau rises to the level of the scleral spur

The mechanism of pure plateau iris is rare, compared to the pupillary block, but these two mechanisms can frequently coexist [11]. This is a direct pre-trabecular blockage by the root of the iris.

UBM is a valuable diagnostic aid, because it provides better analysis of the ciliary body and structures behind the iris [12,13], thus allowing the diagnosis of the plateau iris plateau and the determination of its primary or secondary character.

Primary iridociliary polycystic disease is one of the etiologies responsible for secondary plateau iris. It occurs spontaneously and is solitary in 80% of the 20 or 30 year- old patients (54.3%) with no sex ratio [2, 14]. It is often asymptomatic (rarely responsible for an angle closure), of rounded form (diameter varying between 200 and 2500 μ m), with hyperechoic fine wall and anechogenic content [2, 15].

It is most often located at the iridociliary junction or at the level of the pars plicata in the lower and temporal area. The incidence and diameter of these cysts decrease with age [2, 14].

The treatment is based on the Argon laser iridoplasty at the root of the iris [2], and most patients with a plateau iris configuration are "cured" by laser peripheral iridotomy (PI) that raises the associated pupillary block [11], with the risk of blocking the PI by a cyst [2].

Our observation shows the advantage of the UBM examination in the case of acute attacks of glaucoma by angle closure, thus making it possible to demonstrate, on the one hand, the mechanism responsible for closing the angle (pupillary blockage and / or plateau iris) and on the other hand, it highlights the primary or secondary character of the plateau iris configuration. The iridociliary cysts are often asymptomatic and regress with time but in the presence of a triggering factor (all factors that directly or indirectly cause mydriasis) may be responsible for one or more ocular hypertensive crisis by the pre-trabecular blocking mechanism. We did not realize the iridoplasty with Argon laser, because the patient's intra ocular pressure(IOP) was balanced by a YAG laser PI and monotherapy (pilocarpine diluted to 0.1%). The Adelphe eye also benefited from a prophylactic PI.

CONCLUSION

Although a plateau iris syndrome can be present and diagnosed by gonioscopy, UBM is an essential

examination to evoke the primary or secondary character of this configuration and to visualize iridociliary polycystosis. Control of intraocular pressure was achieved by monotherapy and YAG laser PI.

Disclosure of interest

The authors declare that they have no conflict of interest concerning this article.

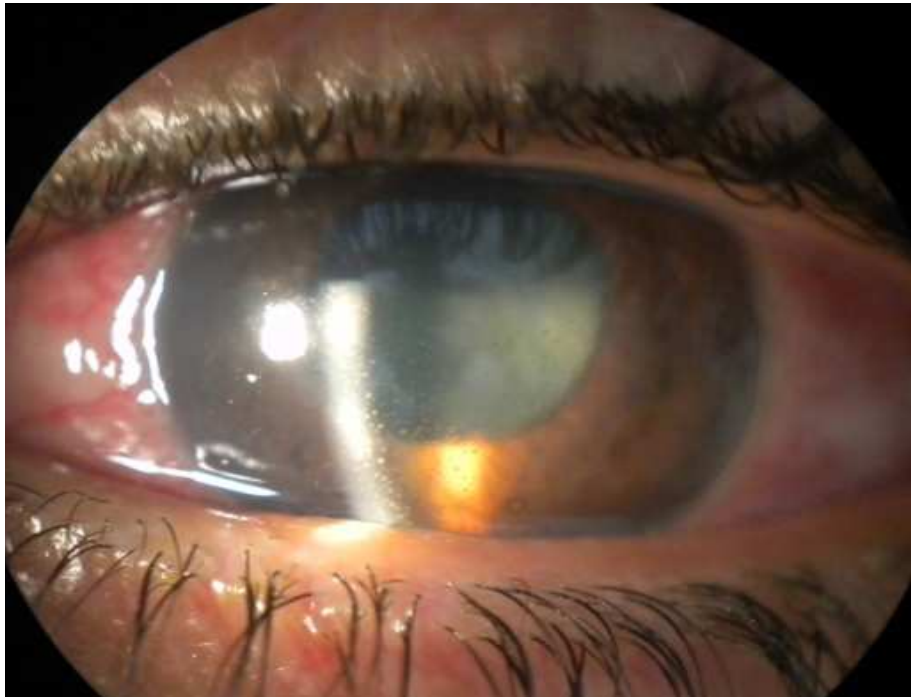


Figure 1 : Biomicroscopic examination of the left eye shows epithelial mist, retrodesmotic precipitates, normal anterior chamber depth, semi-mydriasis.



Figure 2 : UBM examination of the left eye shows an iridociliary polykystosis

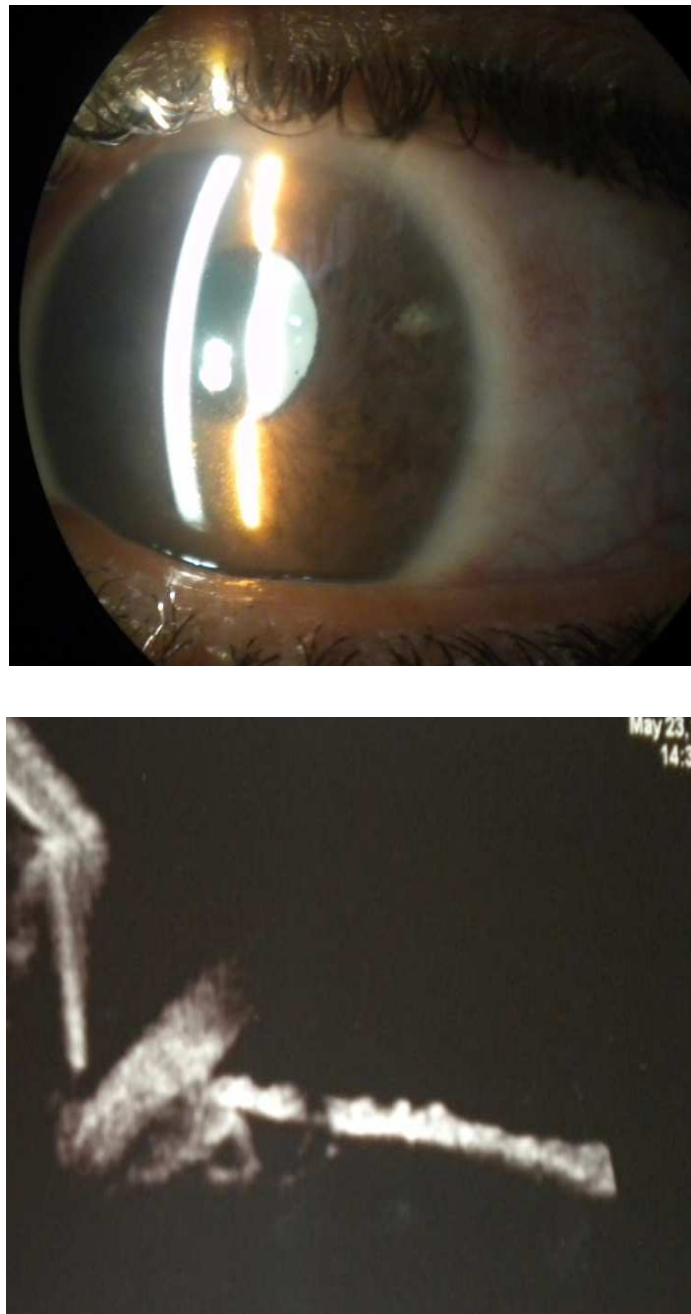


Figure 3 : The left eye after YAG laser peripheral iridotomy (PI). Note the PI site away from the irido-ciliary cyst.

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