



CLASSIFICATION OF TYPES OF PRIMARY GLAUCOMA BASED ON HIGH-FREQUENCY IMMERSION ULTRASOUND BIOMICROSCOPY DATA

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ANNOTATION

The diagnostic method (UBM) - ultrasound biomicroscopy is the most informative and easily used for diagnosing and determining the method of surgical treatment for each patient individually. Ultrasound biomicroscopy makes it possible to visualize with micron precision in real time the main structures of the iridociliary zone: the iris, ciliary body, posterior chamber, lens, fibers of the zonule of zinc involved in the formation of intraocular blocks, and to identify the specifics of changes in their topographic relationship depending on the leading component of the blockade corner.

KEYWORDS. *Ultrasound biomicroscopy, primary angle - closure glaucoma , diagnosis , treatment.*

RELEVANCE

Today, the method of medical imaging, High-frequency immersion ultrasound biomicroscopy (UBM study) is an objective and most informative way to study the state of the anterior segment and the outflow pathways of intraocular fluid (IOH) in primary glaucoma. The process of formation of the intraocular fluid outflow tract is prolonged over time, which is a prerequisite for monitoring the state of the intraocular fluid outflow tract in various forms of primary glaucoma [3].

As clinical observations show, assessing the adequacy of the formed outflow tracts of the intraocular fluid in primary angle-closure glaucoma (PACG), especially after fistulizing antiglaucoma interventions, is important, but complex, for ophthalmologists [6].

In the currently known classifications based on biomicroscopic examination, the key role belongs to the isolated characteristics of the anterior segment of the eyeball in glaucoma. TO use V clinical practice Moorfields Bleb Grading Sistem [1.6], Indiana Bleb Appearance Grading Scale [8], Wiersburg Bleb Classification [7.9] are recommended . Despite elements of standardization, these assessment systems are not without subjectivity and do not have clear criteria between normal and pathological. None of the proposed schemes provides for a comprehensive simultaneous analysis of the internal fistula, the intrascleral part of the drainage system of the eye and the filtration cushion after surgical treatment.

Purpose of the study is to develop classification ultrabiomicroscopic differential diagnostic criteria for the normal and pathological state of the eyeball in types of PACG.

MATERIALS AND METHODS

250 patients were observed. All patients were diagnosed with primary glaucoma. Of these, 102 patients (40.8%) had primary OAG and 148 (59.2%) had angle-closure glaucoma. Among patients with PACG with pupillary block - 103 patients (183 eyes), creeping variety - 16 patients (32 eyes), flat iris - 18 (36 eyes) and iridolenticular block 11 (22 eyes). In all cases, the glaucomatous process was drug-resistant. The age of the patients ranged from 48 to 69 years (average 61.09). The stages of the glaucomatous process were distributed as follows: I (initial) - 49 patients (average age 57.6), II (advanced) - 65 patients (average 59.7), III (advanced) - 24 patients (average 62. 3), IV (terminal) – 10 patients (average 64.8).

All studies and manipulations were performed in accordance with the World Medical Association Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects.

RESULTS AND DISCUSSION

Based on the results of UBM studies, we propose to carry out a comparative analysis and determine the most significant indicators of UBM research for types of PACG.

Based on this, we propose the following UBM classification scheme:

According to the depth of the anterior chamber, in mm: deep – more than 3.1 mm;
average depth from 2.5mm to 3.0mm (typical for OAG);



flickering - from 1.6 mm to 2.2 mm (characteristic of PAH with a flat iris and a “creeping” variety);
very small – from 0.9mm to 1.5mm (typical for PGR with pupillary block); absent – 0.5 mm or less (typical for PAOG with an iridolenticular block).

According to the width of the UPC, degrees: from 12.0 and more - wide (OUG);
From 8.0 to 12.0 – narrow (ZUG with a flat iris and a “creeping” variety);
From 5.9 to 7.9 – very narrow (typical for PGR with pupillary block);
Less than 5.8 – the UPC is closed (typical of the UG with an iridolens block).

According to the position of the ciliary body

Anterior position - the distance “trabecula – ciliary body” is less than 0.49.
Average position - distance “trabecula-ciliary body” from 0.63 to 0.69;
Posterior position - distance “trabecula – ciliary body” 0.70 or more;

According to the shape and depth of the rear chamber:

Triangular Deep - from 0.58 or more (typical for PGR with pupillary block);
Triangular Average - from 0.50 to 0.58 (typical for OAG); triangular small – from 0.34 to 0.49 (typical for PGR with a flat iris);
Arcuate Very Small - 0.30 or less (characteristic of “creeping” glaucoma).

According to the degree of structural damage to the anterior segment (iris atrophy) and iridociliary zone according to the thickness of the iris:

I degree – characterized by thinning of the iris (from 0.32 to 0.35), a decrease in the “trabecula-iris” distance (from 0.12 to 0.16), anterior position of the ciliary body, a tight fit of the iris to the lens (the “iris-iris” distance lens" from 0.25 to 0.31).

II degree – characterized by thinning of the iris (from 0.28 to 0.31), a decrease in the “trabecula-iris” distance (from 0.08 to 0.11), anterior position of the ciliary body, a tight fit of the iris to the lens (the “iris-iris” distance lens" from 0.19 to 0.24), partial destruction of the pigment border of the pupil, increased pigmentation of the trabecular zone in the open part of the UPC.

III degree of damage - characterized by thinning of the iris (from 0.18 to 0.29), a decrease in the “trabecula-iris” distance (from 0.03 to 0.07), anterior position of the ciliary body, uneven tight fit of the iris to the lens in segments (“iris-lens” distance from 0.13 to 0.18), the absence of a pigment border, the appearance of pronounced focal atrophy of the iris, shallow or very shallow depth of the anterior chamber and lack of access to the APC.

CONCLUSION

Thus, our proposed classification of UBM studies for primary glaucoma can be useful in the early diagnosis of PACG and determining treatment tactics. It is of particular importance when choosing a surgical method for antiglaucomatous surgery.

LITERATURE

1. Quigley HA, West SK, Rodriguez J. et al. The prevalence of glaucoma in population-based studies of Hispanic subjects Proyecto: VER Arch Ophthalmol. – 2001.- Vol.119/- P. 1819-1826.
2. Pavlin CJ Practical application of ultrasound biomicroscopy // Can J Ophthalmol.- 2015- Vol.30.- P.225-229.
3. Pavlin CJ, Foster FS Ultrasound biomicroscopy of the eye. - Springer-Verlag New York.-2015.- 214 p
4. Libman E.S., Chumaeva E.A. Comprehensive assessment of the prevalence of glaucoma // Glaucoma: materials. Scientific-practical conference. “Glaucoma: results and prospects at the turn of the millennium.” - M.1999.-303-306.
5. Krasnov M.M. Glaucoma surgery: development, current state, possibilities of pathogenetic effects // Vest. ophthalmology. - 1967 - No. 5. - p. 21.
6. Nesterova E.E. Ultrasound biomicroscopy in the choice of surgical treatment for patients with glaucoma: abstract thesis. .. Candidate of Medical Sciences - Krosnoyarsk, 2010. - 25 p.
7. Quigley HA Number of people with glaucoma worldwide // Br.J. Ophthalmol. – 1996. May, 80 (5), 389-393.
8. Tran HV, Libermann JM, Ritch R. Iridociliary apposition in plateau iris syndrome persists after cataract extraction // Am. J. Ophthalmol.- 2003. –Vol. 135.- P. 40-47.
9. Fayzieva U.S. Development of pathogenetically oriented technologies for laser treatment of primary angle-closure glaucoma in Uzbekistan: abstract thesis. .. Candidate of Medical Sciences - Tashkent, 2004. - 45 p.