



ON THE ISSUE OF CLASSIFICATION OF ANOPHTHALMOS

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INTRODUCTION

Anophthalmos or anophthalmic syndrome is characterized by the absence of the eyeball in the orbit. Signs of the disease are characterized by a complete loss of the ability to see on the affected side, changes in spatial perception and increased fatigue during visual work with the healthy eye and a narrowing of the boundaries of the visual field. Anophthalmos is considered a disease whose development requires several negative factors. Based on the results of the studies, the basis for the appearance of intrauterine abnormalities has not been determined. But the most likely causes of the formation of a congenital form of anophthalmos are the appearance of fibrous threads arising in the fetal bladder (amnion) and the influence of ionizing radiation.

Taking into account the period of occurrence, the pathology is divided into acquired and congenital. Unilateral and bilateral anophthalmos are also distinguished. This type of classification is used at the diagnostic stage. In the practice of ophthalmologists, the following forms of the disease are encountered:- Imaginary, that is, the complete absence of an eye. Other orbital structures differ in their usual structure.- True. It is exclusively congenital and in most cases develops together with other developmental defects.

Anophthalmic syndrome refers to loss of vision resulting from the loss of the eyeball. If anophthalmos occurs on one side, binocular vision is lost. Because of this, the boundaries of the visual field are reduced, leading to changes in the perception of space.

It should be noted that today in the literature the above classification is often used to describe anophthalmos, but classifications of types of anophthalmos that would fully reflect the conditions of adjacent tissues, palpebral fissure, bones and tissues of the orbit, the presence and condition of the musculoskeletal stump, fornix and adnexal apparatus, symmetry of the sides were not found by us in literary sources. This circumstance is an urgent problem of ophthalmoplastic surgery and ocular prosthetics, since existing classifications do not fully reflect damage to the organ of vision (orbit and adnexal apparatus) with anophthalmos, which leads to insufficient and inadequate assessment of the condition of adjacent tissues, and thereby the development of various anatomical and cosmetic defects.

TARGET

To develop a classification of anophthalmos taking into account the condition of the tissues of the orbit and the adnexal apparatus of the organ of vision.

MATERIAL AND RESEARCH METHODS

The study material included 457 patients (467 eyes) with anophthalmos of various etiologies. The average age was 35 years. There were 264 men, 193 women. All patients required ocular prosthetics. The period of wearing the prosthesis ranged from 0 to 53 years. On average - 26 years. The initial examination of the patient was carried out by an ophthalmoplastic surgeon together with a master making ocular prostheses (ocularist). When collecting anamnesis, special attention was paid to identifying the cause of anophthalmic syndrome, the duration of the disease, the length of time wearing an ocular prosthesis, the type of previously used ocular prosthesis, the types and number of surgical procedures undergone. An important issue in determining the cause of problems with wearing a prosthesis was the patient's compliance with the rules of hygiene in using it. Timely cleaning of the conjunctival cavity and prosthesis, regular polishing of it from fat deposits and finally replacing the worn prosthesis with a new one every 3 years. All patients underwent standard and special ophthalmological, as well as neuroimaging studies as indicated. Neuroimaging research methods included assessment of the condition of the bones and soft tissues of the orbit and adnexa of the organ of vision using multislice computed tomography of the midface, orbit and paranasal sinuses, as well as other research methods. Standard ophthalmological methods included external examination, biomicroscopy of the conjunctival cavity, and lavage of the lacrimal canals to exclude its obstruction according to indications. During a visual examination, the condition and position of the eyelids, the shape and size of the palpebral fissure were assessed separately and in comparison with the healthy side. It is especially important to correctly assess the condition of the conjunctival fornix for the condition of the epithelial tissue, depth and the presence or absence of scar changes. The condition of the musculoskeletal stump (MSC) is assessed - its presence, shape, size and mobility. The ODC can be in the form of an underdeveloped (congenital) or atrophied (post-traumatic) eyeball, and can also be formed from a special orbital liner or may be absent altogether. The size, shape and location of the ODC formed from the implant from the orbital cavity are also studied.



RESULTS AND DISCUSSION

As a result of the analysis of the examined patients, it was revealed that congenital anophthalmos was in 56 patients (62 eyes), acquired anophthalmos was in 401 patients (405 eyes). Congenital anophthalmos was diagnosed in pediatric patients (mean age 8 years). Of these, 32 were boys and 24 were girls. In patients with congenital anophthalmos, in 53 cases the process was unilateral, in 3 cases it was two-sided. A symmetrical position of the eyelids and palpebral fissure was observed in 36 eyes; in 26 cases, underdevelopment (hypoplasia) of the palpebral fissure was observed. A study of the condition of the conjunctival cavity showed that the depth of all fornixes in 36 eyes was normal, hypoplasia of the upper (4 eyes) was observed in 26 eyes, hypoplasia of the lower (10 eyes) and both fornixes in 12 eyes. In 36 cases an underdeveloped (atrophied) eye was present, in 26 eye orbits it was not detected. Examination of the orbital bones showed its symmetrical development compared to the healthy side in 36 patients and hypoplasia (asymmetry in 26 cases). In a group of patients (401 patients; 405 eyes; men - 223; women 178; average age - 41 years) with acquired anophthalmos, in 399 cases the process was unilateral, in two patients it was two-sided.

The position of the eyelids and the shape of the palpebral fissure in 198 eyes was symmetrical to the healthy side. Changes in the position of the upper eyelid in the form of drooping (pseudoptosis) or sagging (atony) of the lower eyelid were found in 38 and 106 cases, respectively. Scarring of the upper eyelid was noted in 31 cases, the lower in 24 and on both eyelids in 8 cases.

Examination of the conjunctival cavity showed that the musculoskeletal stump was formed in 342 cases, in 63 cases it was not there. The conjunctival vaults in 236 cases were without pathologies, in 106 cases they were flattened (shortened in depth), of which pathological changes were observed in the upper fornix in 19 cases, in the lower 87 cases. Cicatricial changes in the vaults of the conjunctival cavity were as follows. The upper fornix was affected in 16 cases, and the lower in 47 cases.

Changes in the bone tissues of the orbit in patients with acquired anophthalmos were mainly of a post-traumatic nature. Fracture of the orbital walls was observed in 63 cases. Of these, an isolated fracture of the lower wall - 36 cases, a medial wall - 25 cases, and a fracture of more than one wall and involvement of the orbital edges - 2 cases.

Considering the above, to classify anophthalmos in addition to existing types, we propose to subdivide them as follows:

I. Depending on the origin/occurrence of anophthalmos:

a) congenital anophthalmos;

b) acquired;

II. Depending on the side of the lesion:

a) one-sided;

b) double-sided;

III. Depending on the condition of the orbit and the adnexa of the organ of vision in congenital anophthalmos, it is recommended to classify:

a) condition of the eyelids;

evaluate the following parameters:

- symmetry of the healthy side – symmetrical/asymmetrical;
- eyelid hypoplasia – with hypoplasia/normal;
- coloboma of the eyelids – coloboma/ norm.

b) Conjunctival cavity;

evaluate the following parameters:

- Hypoplasia of the vaults – hypoplasia/normal
- at the same time, clarify the inconsistency of which arches – upper/lower/both arches.

- Presence of a rudiment of the eyeball - rudiment of the eyeball / absence of rudiment of the eyeball

c) Orbital bones;

evaluate the following parameters:

- Symmetry of the healthy side - symmetrical/asymmetrical;
- Hypoplasia of the midface - with hypoplasia/normal

IV. Depending on the condition of the orbit and the adnexa of the organ of vision in acquired anophthalmos, it is recommended to classify:

a) condition of the eyelids;

evaluate the following parameters:

- symmetry of the healthy side – symmetrical/asymmetrical;

- hypoplasia of the palpebral fissure – hypoplasia of the main thyroid gland/normal;

- overextension of eyelid tissues after buphthalmos – yes/normal;

- cicatricial deformities – there are deformities / normal.

b) Conjunctival cavity;

evaluate the following parameters:

- condition of the musculoskeletal stump – yes/no

- vaults - consistent (deep)/insolvent

(flattened)/overstretched;

at the same time, clarify the inconsistency of which arches - upper/lower arch.

c) Orbital bones;

evaluate the following parameters:

- Symmetry of the healthy side – symmetrical/asymmetrical;

- deformities – normal/hypoplasia of all walls of the orbital bones/lower wall/inner wall.

Thus, the proposed classification of the state of the visual organ in anophthalmos, which will take into account all the parameters of the eyelids, conjunctival cavity, orbital bones, the presence of a musculoskeletal stump, etc., will contribute to a more detailed assessment of the state of the visual organ in anophthalmos, which will help not only to carry out correct ophthalmoplastic surgical rehabilitation, but also to adequately select suitable individual prosthetics with the help of an ocularist. This circumstance will help improve the quality of life of patients, reduce cosmetic defects and social problems of people with anophthalmos.

CONCLUSION

The proposed classification is simple and concise, takes into account the nature, degree and localization of damage to both the tissues and bones of the orbit and the adnexal apparatus of the organ of vision in anophthalmos, which will contribute to a more adequate differential assessment of tissue damage to the organ of vision and the implementation of correct tactics in the rehabilitation of patients with anophthalmos.



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