

# CONTEMPORARY INTERPRETATION OF CHRONIC DISEASES OF THE TRANSIENT NOSE AND NOSE SIDE SPACES WITH CHRONIC DACRYOTYSITIS

**Burkhanov Ulugbek.,**

Doctor of Philosophy

**Rakhmonkulov Umedjon.,**

Clinical Resident

**Norpulotov Kurbonali.**

Clinical Resident

Samarkand State Medical University

Samarkand, Uzbekistan

**Annotation.** Tear separation is a fairly significant group among all eye diseases and is distinguished by the fact that it occupies a high place in the structure of diseases. According to a number of authors, 8-25.6% of outpatients suffer from lacrimation. Among patients treated in an inpatient setting for diseases of the organs of vision, this indicator is from 7.45% to 10%. As a rule, the pathology of the horizontal part of the tear ducts is observed more than the vertical part. Therefore, the percentage of pathologies of the horizontal part (tear points, tear ducts) is 75 to 85%. Pathology of the vertical part, in particular, the lacrimal sac itself and the nasolacrimal duct, is relatively rare and occurs in 5-13% of cases

Among 125 patients complaining of tear discharge, purulent dacryocystitis 26%, idiopathic narrowing of lacrimal ducts 27%, purulent DTs with partial patency of lacrimal ducts 10%, conjunctivitis – 21%, demodicosis – 11%, lacrimal dots ectopy - found in 5% of cases [3,4,5].

**Keywords:** the lacrimal sac, lacrimal ducts, inflammation, endoscopic examinations, ophthalmological diseases

The degree of narrowing of the tear ducts and the characteristics of tear separation are different. Obstruction is usually unilateral in 30% of patients and bilateral in 10% of patients. Narrowing in the area of the Krause valve occurs in more than 50% of cases (more in women), followed by narrowing in the area of the Gasner valve in 25% of patients. A somewhat severe and widespread form of the disease, which is characterized by inflammation of the vertical part of the tear duct, is considered DTs [1,2].

. According to various sources, DTs account for 4-8% of all diagnosed diseases of the lacrimal organs. According to other data, chronic inflammation of the lacrimal sac accounts for 2.0-7.5% of all ophthalmological diseases. Middle-aged people often suffer from the disease (50-60 years old). DTs are 7-8 times more common in women than in men, which may be related



to the specific anatomical structure of the nasolacrimal canal. In women, its diameter is significantly smaller than in men. There are a number of other theories that explain the higher incidence of DTs in women, which are discussed below. Clinical classification of DTs involves dividing it into three main groups: acute, chronic and infant DTs. This division is certainly conditional, but the diagnosis reflects the stage of the process, the nature of the separation and the presence of complications [5,6,9].

Bobokhanov G.K., Khasanov S.A. of DTs. Clinical classification according to [1998] is as follows: divided into congenital, acquired and recurrent types by origin. Acquired DTs are divided into two types: of unknown etiology and post-traumatic types. Uncomplicated and complicated in its course. Uncomplicated: catarrhal, purulent. It occurs with complicated phlegmonal, abscess, fistula, eye and nose complications. Combined types: As a result of the defect and trauma of the maxillofacial area, coexistence of lacrimal system and ENT organs with other departmental pathologies [10].

The degree of prevalence of the process and the diagnosis of the disease are inextricably linked, and it is not very complicated. In addition to general clinical methods, special methods are also used - irrigation of the tear ducts, tube tests, nasolacrimal tests, probing, as well as radiodiagnostic methods and endoscopic examinations. Tube and nasolacrimal tests are considered very valuable due to their minimal trauma. To conduct them, a colored solution of collargol is used, it is instilled into the conjunctival sac, and the time of its absorption through the tear ducts is calculated, or traces of the colored solution are determined in the nasal cavity. Probing and lacrimal lavage methods are more commonly used and, while inexpensive, are informative enough. But taking into account the possibility of injuring the epithelial lining of the canals, the operations performed by specialists must be performed with extreme precision, the used needles must be adequate to the dimensions of the tear points and canals [1,6,8].

Among the light, ultrasound and optical diagnostic methods used in the field of dacryology, it is very important to determine the correct combination of them based on clinical examinations. Currently, taking into account that internal structures of the nose are also included in the pathological process, it is necessary and necessary to carry out MSCT examination. In this case, the scanning criteria in the coronary projection should be performed in a size not less than 2 mm. Dacryocystography performed with contrast provides additional information about the disease. Contrast-enhanced CT scan of the lacrimal tract has become a routine examination of the lacrimal tract today [9,10].

Finally, at present, the only new method that allows direct visual examination of the inner surfaces and spaces of the tear ducts is dacryovideoendoscopy.

The development of diagnostic methods creates a basis for the development of new methods of surgical procedures.

Good knowledge of the anatomical structures of the lateral wall of the nasal cavity is considered an important condition for successful surgical operations on intranasal structures and tear ducts. It is known that the tear apparatus is divided into two parts - tear producer and tear separator [2,3,5,9].

The tear-producing part includes the lacrimal gland and accessory lacrimal glands, whose function is to produce tear fluid. From a rhinosurgeon's point of view, it is the lacrimal pathways that are of most interest. Tear ducts consist of upper and lower tear points, tear ducts - horizontal part; consisting of the lacrimal sac and the nasolacrimal canal – is divided into vertical parts. The length of the anatomical structures mentioned above is on average 16-18 mm. They occupy more space along the lateral wall of the nasal cavity.

- Tear producing apparatus:

1 Lacrimal gland – Lacrimal gland

- Lacrimal apparatus:

2 Teardrop Points - Lacrimal punta.

3 Tear ducts – Lacrimal canaliculi.

4 Tear sac – Lacrimal sac.

5 Nasal-tear path – Nasolacrimal duct.

6 Lower nasal concha.

7 Nasal-tear canal separation hole

According to its structure, tear points have a rounded shape, reaching more than 0.6 mm, and touch the mucous membrane of the conjunctival sac. The tear point continues into the tear duct, which in turn has vertical and horizontal knees. A vertical knee is about 1.0 mm long, then continues, at almost a right angle, into a horizontal knee that is 4.3 mm long. Therefore, when probing the lacrimal ducts, the Bowman probe should be inserted vertically and then turned horizontally to avoid perforating the ducts [4,9].

The lacrimal sac is a unique tubular structure, which in turn continues into the nasolacrimal canal without clear boundaries. In some cases, a narrowing due to a Krause thrust (valve) can also be distinguished in the region of the transition point. The length of the lacrimal sac is on average 8-9 mm, and the width is on average 4-6 mm. The nasolacrimal duct has an average length of 16-18 mm and a width of 2-4 mm. The nasolacrimal duct is located along the lateral wall of the nasal cavity, together with the medial wall of the maxillary cavity, and sometimes it penetrates strongly enough into the cavity of the sinus and forms a ridge on its medial wall. The nasolacrimal duct ends at the anterior end of the lower nasal passage. According to the classification proposed by L.I. Sverzhevsky (1932), 4 anatomical types of the termination of the nasolacrimal duct under the lower concha are distinguished. Topographically, the nasolacrimal canal can be divided into two parts: the upper - bony part, the length of which is on average 12 mm, which continues into the nasolacrimal canal, and the lower - membranous part, the length of which is 5-6 mm, the lower nasal passage is lateral its wall is located at the bottom of the mucous membrane. The separation opening of the nasolacrimal canal opens into the "funnel" under the lower nasal concha, at a distance of 30-35 mm from the nasal cavity corridor [3,6,7,9,10].

The exit opening of the nasolacrimal canal can be round, oval, slit-like or point-like, depending on its shape. The average diameter of the nasolacrimal canal is 2-4 mm. The lacrimal sac and the nasolacrimal duct, according to their anatomical location, are inextricably linked with the

labyrinth. In the upper parts, the lacrimal sac is closed by the anterior cells of the gill-like labyrinth. For this reason, inflammatory processes in the glomerular labyrinth can disrupt the secretion of tear fluid. Also, the hook-like tumor (process usuncinatus) and the cells of the nasal pharynx (aggerna) have an organic connection. In most cases, in surgical practices, it is necessary to perform operations in these anatomical structures, therefore, the lower parts of the lacrimal sac are free from the anatomical structures of the nasal cavity, and the penetration into this area is somewhat light, which is very important in the formation of dacryostoma. In some cases, the nasolacrimal duct and lacrimal sac are partially or completely closed with the anterior end of the middle nasal concha. External DTsR is recommended when the lacrimal sac is fully closed. A. Alherabiet. et al. (2017) differentiate between the lacrimal sac occupying a normal, inferior, and superior position relative to the lateral wall [1,2,5,8].

DTs caused by intraoperative injuries during surgical interventions in the nasal cavity and BYoB constitute a separate group. Until now, the main attention in the literature has been focused on orbital complications of functional endoscopic surgery.

There are very few reports of nasolacrimal duct injury and subsequent lacrimation after endonasal surgery. According to Caldwell-Luke, there is information about injuries of the nasolacrimal duct during the surgical procedures of rhinoplasty and sinus surgery. Injury to the nasolacrimal duct during Caldwell-Luke surgery appears to be caused by direct injury to the distal septal foramen (Gasner) during the formation of a dacryostoma in the inferior nasal passage [6,7,8,9].

According to various authors, experienced surgeons develop epiphora in 0.3-1.7% of cases during the expansion of the opening of the middle nasal passage. Some authors emphasize the possibility of injury to the nasolacrimal canal in the process of opening the cells of the labyrinth. Also, injury to the nasolacrimal duct during excision of a hook-like tumor and damage to the lacrimal sac due to impact on the forehead pocket area during maxillectomy may occur. C. LSerdahli and co-authors observed nasolacrimal duct obstruction in 8 patients after endoscopic surgery. In all cases, there was a need to implement DTsR. Injury to the nasolacrimal duct is considered to occur during operations performed in the area of the middle nasal concha, during the expansion of the opening of the nasopharynx with the help of a reverse bone cutter. E. Figueira and others mention 28 cases of acquired stenosis of the nasolacrimal canal, 5 of which are complications of endonasal surgery [4,6,7].

C. Xie and others note that obstruction of the nasolacrimal duct is one of the numerous complications observed in rhinoplasty and surgical operations performed in the UJB. Constant tears are observed in very rare cases. The author cites 11 cases of post-surgical epiphora requiring surgical intervention. From the anamnesis, it is mentioned that in 7 of these cases, the patients underwent surgery in the ENT, and in 3 cases - rhinoplasty was performed. The author notes that 2 areas are considered the most dangerous in terms of complications arising from the lacrimal ducts - the lacrimal sac and the distal opening of the nasopharynx. S. Bharangar and co-authors conducted a prospective study, the purpose of which is to determine

the incidence of nasolacrimal canal injuries during endoscopic endonasal surgery, as well as to evaluate the importance of these injuries [1,3,7,9,10].

For this, after the surgical procedure was completed, a 0.5%-10 ml fluorescein solution was administered to the patient through the lower tear point. At the same time, under the control of the endoscope, the passage of contrast material into the nasal cavity was recorded.

B. Ray et al. 8 cases recorded persistent postoperative epiphora, which was a complication of FESS and required surgical treatment. The authors acknowledge the high efficiency of FESS, which makes this technique more popular, and add that an increase in the number of surgical procedures in this form leads to an increase in complications, including those caused by the nasolacrimal duct. In his works [2,5,9].

V. Cervelli examined the condition of the tear ducts in patients with a deviated septum before treatment and after surgical correction of intranasal structures. According to the author's data, functional obstruction of the nasolacrimal canal is detected in 45.8% of patients with a deviated septum, as a result of closing the opening of the lacrimal canal with nasal shells. The author acknowledges the normalization of tear secretion in all patients after surgical treatment [5,8].

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