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Dacriocistorhinostomy and Screening of the Recurrence

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Abstract

The relevance of the pathology of the lacrimal ducts to date remains extremely important, as it leads to disability and loss of professional fitness for a significant number of the working population. Complaints of lacrimation are presented by 6 to 25% of all patients who visit an ophthalmologist. Diseases of the lacrimal ducts are not only the cause of disability, but also lead to serious complications. Creeping corneal ulcer, leading to persistent visual impairment or even loss of vision, is associated with the presence of dacryocystitis in 40-50% of cases. Severe complications may also arise if purulent dacryocystitis remains unrecognized before surgery on the eyeball.

KEY WORDS: dacriocistorhinostomy (DCR); endonasal approach

Introduction

Treatment of patients with diseases of the lacrimal ducts is one of the difficult tasks of ophthalmology and requires intense and painstaking work from a doctor. The pathology of the vertical part of the lacrimal duct is still an ungrateful problem in ophthalmology, since often, despite of the therapeutic measures, relapses of the disease occur.

According to various authors, in the total mass of eye pathology, diseases of the vertical part of the lacrimal ducts range from 2 to 21.9%. In women, dacryocystitis occurs 6-10 times more often than in men, which is explained by the anatomical and physiological features of the lacrimal ducts.

The social significance the rehabilitation of the patients with pathology of the lacrimal ducts lies in the fact, that the proportion of this pathology in people of working age is quite high.

Lachrymation that occurs with dacryocystitis or stenosis of the nasolacrimal duct is not only a ″discomfort″ disease, but also a factor that reduces the ability to work, especially in people of certain professions that require high vision. It is an aesthetic defect, and when an infection is attached, it can be a prerequisite for a number of eye diseases (conjunctivitis, keratitis, corneal ulcers, scleritis), which poses threat to vision and creates unfavorable conditions for intraocular operations, and can cause ophthalmic and intracranial inflammation.

Diseases of the lacrimal ducts are polyetiological pathology, where diseases of the nose and paranasal sinuses, adverse environmental factors (professional and climatic), the consequences of infectious diseases, injuries, and congenital malformations are important. Modern research methods reveal the predominance of the role of rhinogenic pathology in the occurrence diseases of the vertical part of the lacrimal duct in 67.6 – 100% of patients. In case of injuries of the facial skull lacrimal ducts are also often damaged.

The main method to successfully eliminate irreversible changes in the vertical part of the lacrimal ducts caused by various surgical reasons. Almost 100 years have passed since the Florentine rhinologist A.Toti [1] proposed external dacryocystorhinostomy. External dacryocystorhinostomy according to Toti, being, at one time, a major achievement in ophthalmic surgery, had its imperfections. In ophthalmic practice, external dacryocystorhinostomy is used in various modifications aimed at reducing trauma, simplifying the execution technique and preventing infection of the new fistula.

In otorhinolaryngology, modifications of endonasal dacryocystorhinostomy proposed by West, intranasal microdacryocystorhinostomy and laser dacryocystorhinostomy are used. Often, endonasal operations are performed with simultaneous removal of

the so-called unfavorable rhinogenic factors. However, the use of the "two in one" tactics, even with the use of modern surgical equipment, causes an increase in the inflammatory reaction of the altered nasal mucosa, which is unable to adequately respond to damage during surgical exposure, which leads to a protracted course of healing.

In clinical practice, to form an anastomosis between the lacrimal sac and the nasal cavity during external dacryocystorhinostomy, are used suture and sutureless fistula plastics with mucous membranes.

One of the ways to simplify the formation of the anastomosis and prevent the recurrence of obstruction after the operation of dacryocystorhinostomy is the intubation of the anastomosis with various alloplastic implants.

According to various authors, the results of dacryocystorhinostomy with permanent intubation with alloplastic implants are worse than the results of the same operation with temporary intubation [2,3,4,5].

However, known implants have their drawbacks, namely: they are not easy to manufacture and often do not take into account the anatomical features of a particular person due to the lack of the possibility of intraoperative modeling, and they also have shapes that do not allow to stay in the anastomosis for a long time optimally necessary for the formation of a full-fledged rhinostomy.

After surgery, relapses of the disease occur in 0.6 to 23% of cases at different times the efficiency of repeated surgical interventions ranges from 58 to 80%.

These circumstances make it relevant to search for the most optimal surgical treatment methods aimed at improving the efficiency and simplifying the method of fistula formation between the lacrimal sac and the nasal cavity.

As is known, at one of the stages of endoscopic endonasal DCR, an incision is made in the mucous membrane of the nasal cavity and it is separated in such a way as to expose the bone in the area.

Future dacryostomy opening when the bone remains uncovered by soft tissues after surgery, granulation tissue is formed in this area, which is subsequently remodeled.

Surgery remains the main treatment for dacryocystitis. The operation of choice for this pathology is dacryocystorhinostomy, the purpose of which is to create conditions for the outflow of tears into the nasal cavity by forming a dacryostomy.

In ophthalmic practice, the most common and effective operation for dacryocystitis is external dacryocystorhinostomy. However, the method is not without very significant drawbacks, the essence of which lies in the fact that dacryocystitis etiologically often closely associated with diseases of the nasal cavity and paranasal sinuses.

Dacryocystorhinostomy with an endonasal approach has significant advantages and a number of undoubted advantages, namely: low trauma, cosmetic, less disruption of the physiological system of lacrimal drainage, the ability to eliminate adverse rhinological factors that contribute to the recurrence of the disease during the operation.

During external dacryocystorhinostomies, in 34.3% of cases, certain complications are observed. One of the main factors in preventing and reducing the percentage of these complications is a thorough preoperative clinical examination of the patient, especially the condition of the nasal cavity and paranasal sinuses [6,7,8,9].

Currently, in solving the problem of restoring the patency of the lacrimal ducts, there is a close convergence of interests and efforts of ophthalmologists and otorhinolaryngologists.

In our opinion, the development and introduction of diagnostic and therapeutic endoscopic interventions into clinical practice in recent years, in our opinion, greatly facilitates the task of otorhinolaryngologists and allows them to more widely engage in endonasal surgery for lacrimal duct pathology, as well as to transfer endonasal interventions to the microsurgical level using endoscopic techniques [10,11,12,13,14,15].

The recurrence rate after dacryocystorhinostomy varies from 1 to 15% for endonasal operations and from 0.6 to 25% for external access. The effectiveness of repeated surgical interventions ranges from 58 to 80%. The development of preventive measures aimed at preventing scarring of dacryostomy in the postoperative period goes in different directions. However, the proposed innovations are used in a small number of cases and are not widely used.

Based on the foregoing, we have identified the purpose and objectives of the study.

Materials and Methods

20 patients who underwent endonasal dacryocystorhinostomy were observed. There were 17 female and 3 male patients. Their age ranged from 18 to 85 years. We divided the patients into 2 groups. 10 patients in the first group and 10 patients in the second group. In the first group, 6 months after the operation, we called all patients once a week and washed the tear ducts, while in the second group, no washing was done.

Drains were removed from patients in both groups on the 8th month after surgery.

Results

As a result of our observation, it was revealed that despite the difference in age and gender, all operations were performed with the same technique, none of the patients had intraoperative or postoperative complications, postoperatively all patients were prescribed antibiotic therapy with amoxicillin and clavulanic acid for 7 days and also antibiotic eye drops 1 drop per day 4 times for 7 days.

Only one of the patients with weekly lavage needed a repeat operation, while in the second group we had four relapses.

It is necessary to pay attention to such reliable facts, despite the fact that the groups studied by us are small.

Discussion

Regardless of age and sex, as well as concomitant diseases, during the weekly visit of the second group of patients for 2 months of observation, it was revealed that in the initial period, some of them had some tears and during washing, we obtained the inflammatory exudate in the lacrimal sac, and in some cases, despite the presence of drainage, the tears flowed freely in the newly formed foramen and therefore did not Patients did not experience tearing or any other discomfort.

After several procedures, the inflammatory exudate was washed away and the inflammatory swelling was removed, and the channel became freely flowing.

Based on our observation, in the postoperative period, 6 months after the surgery, weekly washing of the lacrimal canal for 2 months without removing the embedded drainage reduces the probability of artificially obtained lacrimal canal closure and the need for reoperation, although the said process, carrying out the same intensity as the procedure, is quite uncomfortable and has certain difficulties connected.

Conclusion

Taking into account our observations, we believe that if the patient does not have any complaints (tears, redness, stuffy nose) in the postoperative period for 1-6 months, he does not need additional washings. In the presence of the above-mentioned complaints, in order to prevent restenosis, it is necessary to periodically flush the lacrimal canal before the drainage is removed.

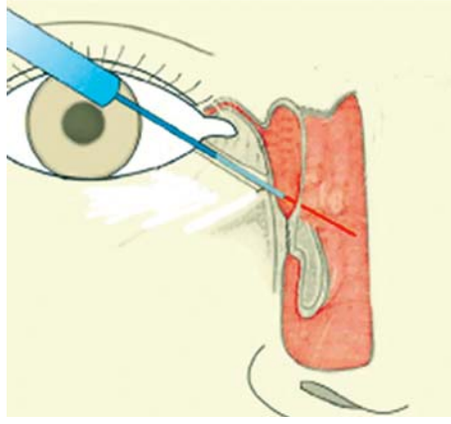

Fig.1. Schematic illustration of laser cystectomy. Nd:YAG laser probe is introduced through the lower punctum and lower canaliculus to evaporate epithelium of the lacrimal sac.

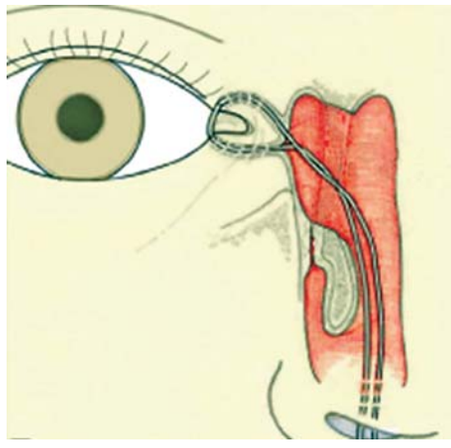

Fig 2. Schematic illustration of laser cystectomy. Final appearance of the laser cystectomy. Note the complete removal of the lacrimal sac.

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