

DACRYOCYSTORHINOSTOMY (DCR)

INTRODUCTION

Dacryocystorhinostomy (DCR) is a procedure used to treat patients with too many tears (See Epiphora). Epiphora is sometimes seen with a blockage in the tear duct (nasolacrimal duct).

Normally, tears empty into the nasal cavity. They are formed in the lacrimal gland. The gland is located at the upper outside corner of the eye. Once made, tears cross the eye towards small openings in the eyelids (puncta). They then travel through a tube (canalicular system) into the tear sac (lacrimal sac). The lacrimal sac is found between the eye and the nose and moves tears into the nasal cavity through the nasolacrimal duct (See Figure 1).

The path for tears to travel is long. There are many causes of too many tears. Blockage of the nasolacrimal duct is one common cause. This is sometimes treated by creating an opening from the lacrimal sac into the nasal cavity. The procedure is called a DCR. Eye surgeons and ENT surgeons help treat this condition.

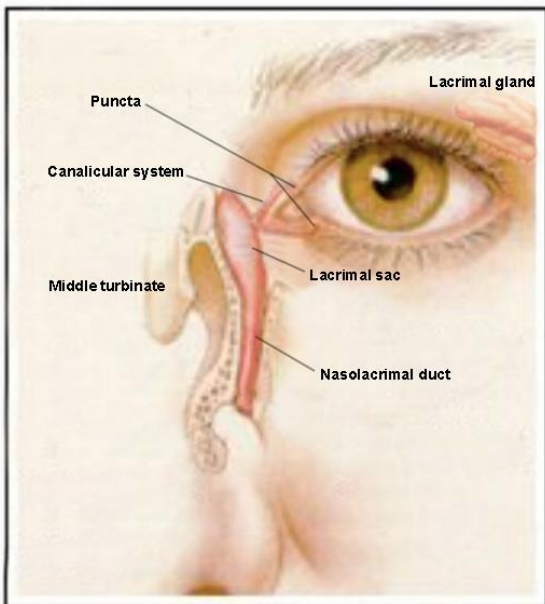


Figure 1. Tears originating from the lacrimal gland cross over the eye into the canalicular system on their way to the nasal cavity

INDICATIONS

DCR is done to treat blockage of the tear duct. There are many causes of tear duct blockage. Blockage can be due to eye injury (trauma). Other causes are scar tissue from prior surgery, tumors and other medical conditions that cause inflammation.

A number of tests are done to find the cause(s) and exact location of the blockage. Your doctor will want to examine you in the office. Sometimes it is necessary to place a small tube into the duct to see if it is open. Other times it is necessary to use the tube to run water and flush the duct (See Figure 2). Dye (fluorescein) is also placed in the tube to see how long it takes to clear. These evaluations can be done easily and with minimal pain in the office setting.



Figure 2. Probing and irrigation is commonly performed in the evaluation of tearing

PROCEDURE

Surgery is done either in the operating room while under general anesthesia (unconscious) or local anesthesia (only numbing the area). The decision depends on the surgeon's and patient's preferences. There are two approaches for the procedure. The first uses an external incision (through the skin of the face). The second uses a small telescope and instruments through the nose (endoscopic). The goal of both options is to bypass the blocked duct. Tears can then drain into the nose directly from the lacrimal sac.

The external approach requires a small cut between the eye and the nose. Once the lacrimal sac is found, it is opened into the nasal cavity. To keep the opening from closing, the surgeon can use sutures or stents (See Figure 3).

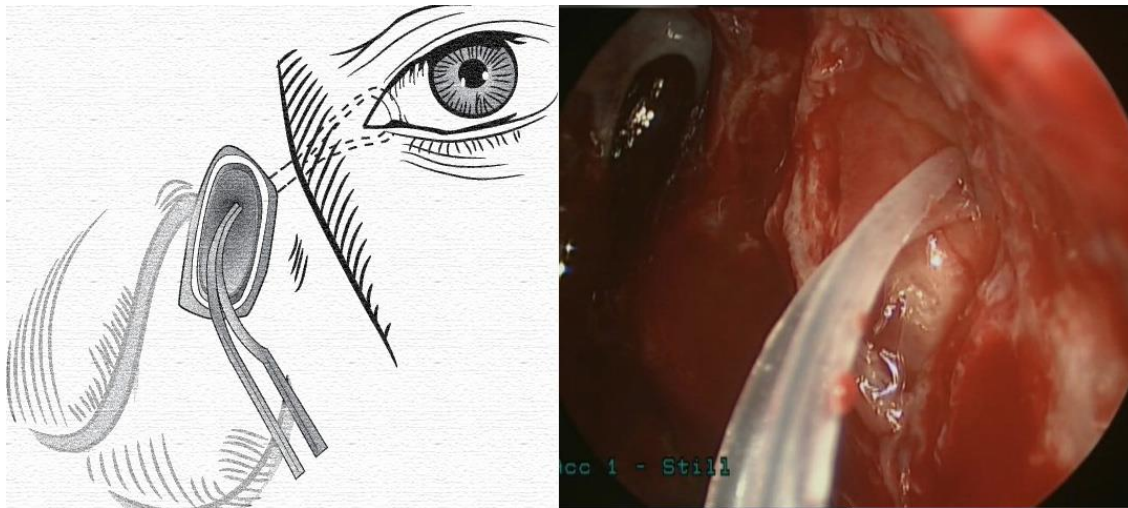


Figure 3. If used, a stent is placed through the puncta into the nose

When the procedure is performed endoscopically, the goal is the same. This approach is common because there are no facial scars and less pain. The location of the lacrimal sac is found based on anatomic landmarks. Bone is removed over the lacrimal sac. The sac is then opened into the nose (See Figure 4). Stents may then be placed to keep the sac open following surgery.



Figure 4. Intraoperative endoscopic view of the opening created from the lacrimal sac into the nose (circled) after irrigation with fluorescein dye, the common internal punctum is located at the asterisk

RISKS

With the endoscopic approach, pain is low. It is treated with over the counter or mild prescription pain medications. Infection is not common, but many surgeons use antibiotics (pills or eyedrops) after surgery. A small amount of bleeding can be seen after the procedure. Scar and bruising of the skin can be seen with external procedures but does not last for long. Scarring inside the nose can cause blockage of the duct to reform. If a stent is used, it can move out the nose or up into the eye. This often requires stent adjustment or removal. Bleeding in the eye socket or injury to an eye muscle is rare but serious. Either condition can cause double vision or vision loss.

BENEFITS

DCR is a simple outpatient procedure. Overall success is above 90% in most situations. The risks and side effects of the procedure are low. The benefit can be long-lasting relief of tearing.

SUMMARY

There are many causes of tearing. Proper testing needs to be done to find the cause and type of surgery needed to best address the problem. Talk to your doctor to find out if you are a candidate for DCR. The procedure is performed as an outpatient with minimal downtime. Your surgeon will decide if an external or endoscopic approach is right for you. Overall, the ultimate goal and success rates are quite similar.