Derwent Eye Specialists

Blocked tear ducts and DCR Surgery

What is a Blocked tear Duct?

Tears are produced manly by the lacrimal gland. This sits in the upper outer aspect of the eye. Tears are washed across the eyeball before entering the tear duct drainage system. Tears enter two small structures called puncti. The lower punctum is responsible for 80% of the drainage due to gravity. Tears enter the punctum and pass down a hollow tube called the canaliculus. The upper and lower canaliculus unite to form a common canaliculus which enters a structure called the lacrimal sac. The lacrimal sac is where tears are stored before they pass down a hollow tube called the nasolacrimal duct. This duct enters the nasal cavity disposing off the tears from the eye into the nose keeping your eye dry. A blockage can occur anywhere along the tear drainage system, but the role of a DCR is when the blockage is located in the nasolacrimal duct or the common canaliculus.

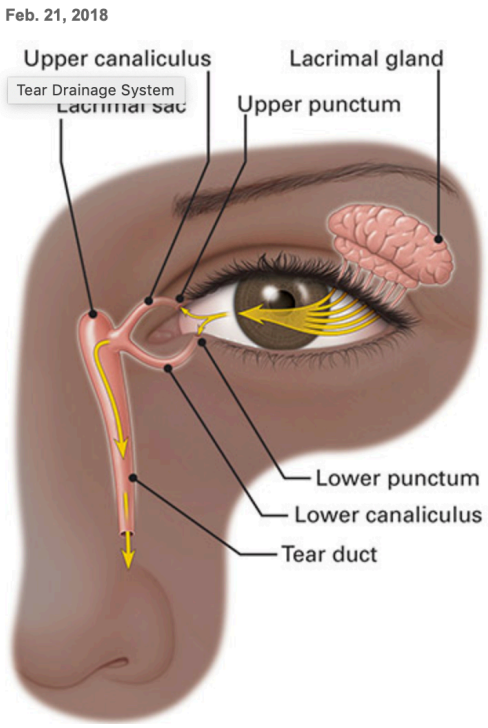

Figure 1: Anatomy of the nasolacrimal duct

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Why do they occur?

The majority of the time a blocked tear duct has an idiopathic cause i.e. there has been no predisposing factor and unfortunately the drainage system has become blocked.
We do know that tear duct blockages are more common in women as there may be a role of female sex hormones on these tissues. Sinusitis and other nasal pathologies can also play a causative role.

What test are used before surgery?

Usually the diagnosis of a blocked tear duct is clinical based on the patient's history and examination particularly syringing the tear duct as an outpatient. Sometimes more specialised tests are required which provide images of the tear duct system and where a blockage is located.

What is a DCR?

A DCR is short for Dacryocystorhinostomy. It is an operation to correct a blocked tear duct. You would be scheduled for this operation if you doctor has confirmed a blocked tear duct clinically and you have a watery eye.

How do I prepare for the procedure?

Blood thinners such as aspirin or Cartia will need to be stopped 2 weeks before the procedure. If you are on Warfarin this will be need to be stopped before the procedure with an INR of around 2.0 for the procedure to take place. The newer anticoagulant medications need to be stopped 3 days prior.

What happens during the DCR surgery?

This surgery is performed as day surgery under a General Anaesthetic. The procedure typically takes 30-45 minutes. A small incision is made on the flat part of the side of the nose. A thumbnail sized amount of bone is removed and a connection is made between the tear sac and the lining of the nose (the nasal mucosa). Small plastic tubes are usually also inserted to keep the newly formed passageway open. At the end of the operation a firm pressure dressing is placed over the eye and the nostril is packed with special absorbent dressing which absorbs on its own and should not be touched.

What happens after the surgery?

You should not consume hot drinks for the first 24 hours after the procedure. The dressing and nasal packing/dressing stays on for the first 24 hours. They will be removed in the clinic on the first post-operative day. After the dressing is removed you will have antibiotic cream to instil in the eye and on the wound. You will also have steroid nasal spray to use which reduces inflammation in the nose. Ice-packs can be used over the operated eye to help reduce swelling.
The eye may be not water at all straight after the operation, but it is not uncommon for watering to take time to settle down as the post-operative swelling reduces. The presence of tubes in the corner of the eye can actually stimulate watering, so the watery eye may not completely settle until the tubes are removed.
The tubes are removed between 2-3 months after surgery in the clinical rooms in a straightforward procedure.

What are the common side effects?

The area which is being operated on has a very good vascular supply. It is common to get spotting of blood from the nose after the procedure. Sometimes the blood can go to the back of the throat and may be spat out.

Bruising, swelling and postoperative pain is not uncommon.
A sensation of air over the surface of the eye caused by the connection made with the nasal cavity.
Sometimes the tubes inserted at the time of surgery can migrate and require re-positioning.

What are the rarer side effects?

A large nose bleed requiring attendance to an emergency department and cauterisation and/or packing of the nose to stem bleeding.
An infection is rare after this procedure, but it can happen.
Extreme pain requiring opioid analgesia
Persistent numbness which can track down to the corner of the mouth.
Webbing of the wound which may require subsequent surgery to correct.
A leakage of cerebrospinal fluid (the fluid around the brain) during the procedure, which may require further surgery, this is extremely rare during a DCR operation.

When do I need to be seen again?

Patients are seen the next day after surgery to remove the bandage, at 1 week to check on post-operative progress and between 2-3 months after surgery to remove any tubes that have been used.

How good is DCR surgery long term?

The long term reported success rates after a DCR are approximately 90% for a blocked nasolacrimal duct and 75-80% where the blockage is at the common canaliculus. A DCR can be repeated should the first procedure not work.

Useful Resources

https://www.aao.org/eye-health/diseases/what-is-blocked-tear-duct