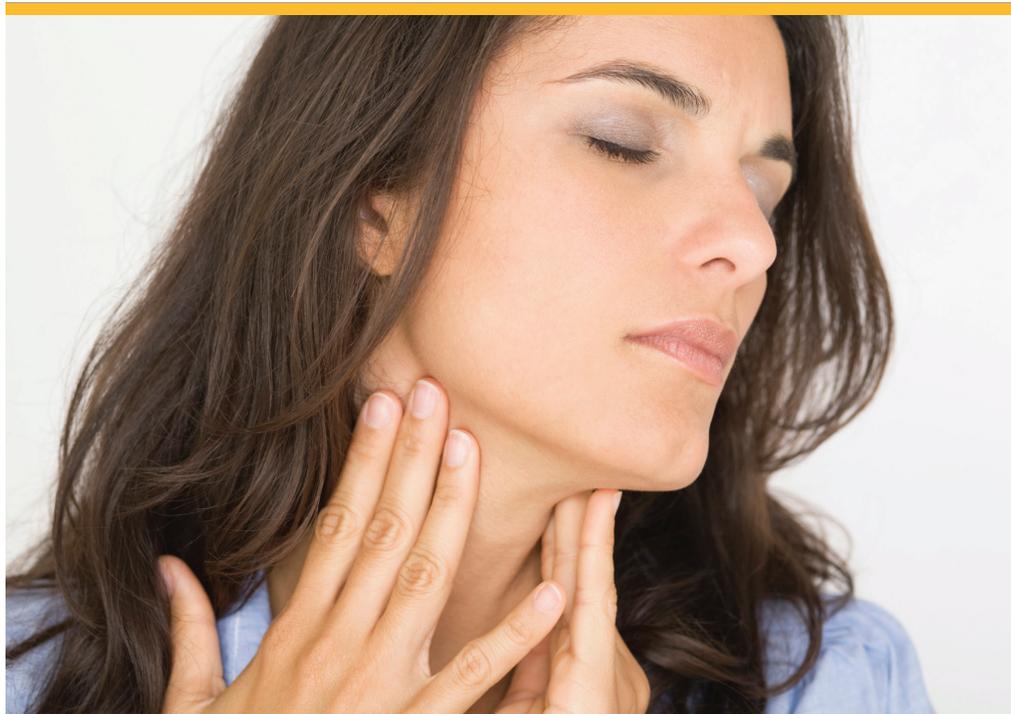


Sialendoscopy allows for endoscopic removal of saliva stones



A minimally invasive procedure is now available for the treatment of saliva stones, providing a low-risk solution to a problem that has been difficult to manage. Sialendoscopy is an innovative technique that uses extremely narrow endoscopes to diagnose and treat many conditions of the salivary glands.

The human body has three pairs of major salivary glands: parotid, submandibular and sublingual. These glands produce the digestive and lubricating saliva necessary for swallowing and to maintain oral health. However, salivary production can be obstructed by the formation of salivary gland stones, causing repeated infections of the salivary gland. While the incidence of saliva stones is unknown, it's estimated that about 10,000 Americans experience an infection each year.

The majority of stones arise in the submandibular — or submaxillary — gland, typically producing repeated swelling of the cheek or under the jawbone. These episodes of swelling and tenderness can be improved temporarily with antibiotics, warm compresses or sialogogues — foods like sour candies or vitamin C supplements that increase salivary flow. However, the inflammation frequently returns. Repeated infections can lead to permanent narrowing of the salivary ducts. The obstruction then becomes chronic, and conservative measures fail to provide relief.

Consultation for repeated salivary gland infections

An elegant solution now exists for patients with recurring neck and jaw tenderness and swelling due to salivary stones. While primary care physicians may have been reluctant in the past to refer patients for open surgery, sialendoscopy offers a resolution without the attendant risks of surgery, says Abie Mendelsohn, MD, assistant professor of head and neck surgery.

“We get concerned when infection occurs two or three times a year for many years,” he explains. “Patients are suffering and may not realize that these repeated infections are due to stones in their glands. Primary care doctors may not make a referral because, in the past, we didn't have a very good answer for it.”

Improved optical technology, including extremely small endoscopes, has made sialendoscopy possible.

“We are seeing a true evolution in the treatment of salivary gland disorders,” Dr. Mendelsohn says. “It's exciting to offer patients an option that is effective as well as minimally invasive.”

An alternative to open surgery

Prior to sialendoscopy, treatment for salivary gland stones was limited to irrigation or surgical removal of the affected gland through an open incision. Simple salivary gland irrigation can free the stone, though the effectiveness of this procedure varies. Surgical removal of the gland, particularly for the submandibular gland, is effective but can result in rare serious complications, such as damage to the nerves affecting the lower face. For this reason, many patients choose to forgo surgery in favor of conservative management.

Advances in optical technologies have paved the way for sialendoscopy, which provides transluminal visualization of major salivary glands and offers a mechanism for addressing both inflammatory and obstructive pathology. The procedure is typically performed under general anesthesia. The opening of the duct leading to the affected gland is dilated to allow for insertion of the endoscope, which ranges in outer-diameter size from 0.8 millimeters to 1.6 mm. Saline solution is slowly infused through the endoscope to carefully inflate the duct. The salivary gland duct can then be examined for any abnormalities including stones or stenosis. A wire basket can be used to grasp and remove the stone.

Other procedures can be performed through the endoscope, such as drill or laser lithotripsy, to assist in stone removal. An estimated 5 percent of cases are resistant to endoscopic treatment due to the size of the stone or position in the gland. Surgical removal is recommended in these few cases.



Endoscopic view of salivary gland duct showing a stone (yellow) in the center being removed with a miniature basket (silver wire).

The importance of technical expertise

Although it appears straightforward, sialendoscopy is a technically challenging procedure that requires substantial operator experience. At UCLA's Department of Head and Neck Surgery, ultrasound or computer tomography imaging is performed to examine salivary ducts for stones prior to sialendoscopy.

Sialendoscopy is routinely performed as an outpatient procedure, with patients eating and drinking without limitations the same day. Occasionally, small stitches are placed within the mouth in the area of the duct opening, such as under the tongue for removal of stones in the submandibular gland. Stitches are absorbable and do not require removal.

Preventing future salivary stone development

Most patients will require no further treatment following successful endoscopic stone removal. Since sialendoscopy is new, it's not yet clear whether patients might experience a recurrence of stones in the affected gland. In approximately 3 percent of cases, stones form in more than one gland.

The expelled stone is sent for laboratory mineral analysis, and patients treated at UCLA receive comprehensive follow-up counseling on strategies to minimize the risk of saliva stone development, which include adequate hydration.

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