

## LSUHSC reports first successful salivary stone removal with robotics

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Dr. Rohan Walvekar, Assistant Professor of Otolaryngology Head and Neck Surgery, Director of Clinical Research and the Salivary Endoscopy Service at LSU Health Sciences Center New Orleans, has reported the first use of a surgical robot guided by a miniature salivary endoscope to remove a 20mm salivary stone and repair the salivary duct of a 31-yearold patient. Giant stones have traditionally required complete removal of the salivary gland. Building upon their success with the combination of salivary endoscopic guidance with surgery, Dr. Walvekar and his team have significantly advanced the procedure by adding robotics. The technique not only saves the salivary gland, it also reduces blood loss, scarring, and hospital stay. The case is published online in the Early View (articles in advance of print) section of the journal, *The Laryngoscope*.

Several factors can make removal of large stones technically challenging including a small mouth opening, large teeth, and obesity, which limit access and exposure. Limited exposure also greatly complicates the identification and preservation of the lingual nerve, which provides sensation to the tongue, as well as the placement of sutures to repair the salivary duct if necessary.

"Robot-assisted removal of stones is a technical advance in the management of salivary stones within the submandibular gland," notes Dr. Walvekar. "We have found it to be helpful in performing careful dissections of the floor of mouth preserving vital structures in this region– mainly the lingual nerve, submandibular gland and salivary duct.



The use of the salivary endoscopes in addition to the robotic unit makes the procedure even safer and target oriented."

Salivary endoscopes revolutionized the management of salivary stones by allowing experienced surgeons to remove the stone while preserving the gland. The endoscopes improve surgical view, exposure and magnification of the surgical field through a two-dimensional view. The robotic unit produces a high definition, three dimensional images. The magnification and dexterity provided by the robot in the confined space of the oral cavity allow excellent identification of vital structures as well as the placement of sutures.

Stones sometimes develop from the crystallization of salts contained in saliva. Salivary stones can cause a blockage resulting in a backup of saliva in the duct. This not only causes swelling, but pain, and infection. Symptoms include difficulty opening the mouth or swallowing, dry mouth, pain in the face or mouth, and swelling of the face or neck most noticeable when eating or drinking. Salivary stones are most common in adults and it has been estimated that about a quarter of people with stones have more than one. Salivary stones most often affect the submandibular glands at the back of the mouth on both sides of the jaw.

"The robot-assisted stone removal was first devised and performed in the Department of Otolaryngology Head and Neck Surgery at LSU Health Sciences Center New Orleans," said Dr. Walvekar. "With these newer advances, mainly salivary duct endoscopy and robotic surgery, we can offer minimally invasive, gland preserving, same day, surgical procedures that represent a tremendous advance over the traditional gland removing surgery via neck incision that is recommended for this clinical condition."

Provided by Louisiana State University Health Sciences Center



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