The Role of Adenectomy for Salivary Gland Obstructions in the Era of Sialendoscopy and Lithotripsy

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KEYWORDS

• Parotid • Submandibular • Sialadenitis
• Lithotripsy • Sialendoscopy

Obstructive sialadenitis is the major cause of salivary gland disorders, and accounts for approximately 50% of all benign disease.[1] Patients typically present with the so called "meal-time syndrome."[2] Recurrent and painful periprandial glandular swelling is typical and may be complicated by bacterial superinfection indicated by a purulent papillary discharge.[3,4]

Salivary gland obstruction may be caused by the presence of sialolithiasis, stenosis or anatomic variations in the ductal system, intraductal fibromucinous plugs, polyps, or foreign bodies, all of which impair physiologic salivary down-flow and lead to stasis. Sialolithiasis is still the main cause of salivary obstruction, and is detectable in more than 65% of cases.[5] Between 80% and 90% of all cases of sialolithiasis affect the submandibulary gland, probably because of the intrinsic features of its secretion.[2,6] The parotid gland is involved in only 5% to 10% of cases.[6]

The second most frequent cause of salivary obstruction is duct disorders, mainly strictures and kinks that prevalently involve the parotid duct system (75% of cases), although other reported disorders include accessory ducts, sphincteric-like structures, pelvis-like formations, and intraductal evaginations.[7–13] Salivary obstruction may also be related to the presence of intraductal mucous plugs, foreign bodies or polyps, sialodochitis, *ab estrinseco* compression from neoplastic masses or reactive

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intraparenchymal lymph nodes, or the granulation tissue associated with immunologic disorders (ie, Sjögren's syndrome), but radioiodine therapy and *ab estrinseco* ostial compression by dentures (in the case of the parotid gland) have been also reported.[1,8,11]

Invasive adenectomy has sometimes been favored because distinguishing the cause of mechanical obstruction based on a clinical assessment and traditional radiography, ultrasonography, conventional sialography, or CT is not simple and sometimes cannot be done.

Invasive surgery has also been justified based on a mistaken belief that the salivary gland obstruction is associated with an irreversible parenchymal inflammation that impairs salivary function, but this has been recently denied by scintigraphic and histopathologic findings of the secretory function recovery and histologic normalization after stone removal.[14–17]

The introduction of new diagnostic tools has substantially improved diagnosis, with the incidence of idiopathic obstruction reduced to only 5% to 10% of cases.[11] Ultrasonography is considered a valuable diagnostic technique, especially in the case of stones, but it has the limitation of being an operator-dependent procedure. Sialoendoscopy has recently partially filled a diagnostic gap because it allows direct visualisation.[9,14] Dynamic MR sialography has also been proposed as a useful diagnostic procedure for salivary duct disorders and the preoperative evaluation of patients undergoing sialoendoscopy.[18,19]

These modern diagnostic tools now make it possible to plan appropriate therapy based on the site and specific cause of the obstruction. Over the past 20 years, new and minimally invasive conservative therapies have been proposed, particularly for sialolithiasis, including extracorporeal shock wave lithotripsy (ESWL), operative sialoendoscopy, interventional radiology, the transoral removal of submandibular stones, and endoscopically video-assisted transcervical or transoral removal of parotid and submandibular stones.

Conservative treatment using sialoballoon dilatation under sialoendoscopic or radiologic fluoroscopic guidance is another useful technique.[20] Minimally invasive gland preservation for salivary gland obstruction has greatly reduced the need for sialadenectomy. Conservative therapeutic options, alone or in combination, can preserve a functional gland in situ in 97% of cases.[21] The published success rates of each of these techniques over the past 10 years are shown in **Tables 1** and **2**.[5,21–40]

Botulinum toxin therapy can be proposed in patients who have recurrent sialadenitis with no radiologic or sialoendoscopic cause of obstruction.[41]

With this background, the residual indications for parotid and submandibular sialadenectomy for salivary gland obstruction in the era of ESWL and operative sialoendoscopy can be better assessed.

IS THERE A RESIDUAL INDICATION FOR SIALADENECTOMY FOR SALIVARY GLAND OBSTRUCTION?

Until the 1950s, parotid gland excision for benign and inflammatory disorders was not considered a standard procedure.[42] The following years saw a more aggressive approach, with total or near-total parotidectomy being advocated for treating chronic parotid sialadenitis.[43] However, because total parotidectomy was associated with a significant rate of facial nerve injury, some authors[44] suggested the use of superficial parotidectomy. In 1978, Casterline and Jaques[43] reported that "near total parotidectomy with removal of the parotid duct can be performed