



Sialoendoscopy in Sjögren's syndrome: new perspectives on diagnosis and treatment – a systematic review

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ABSTRACT

Introduction: Sialoendoscopy, or salivary endoscopy, is a minimally invasive endoscopic procedure that allows direct visualization of the ductal system of the salivary glands, serving both diagnostic and therapeutic purposes. Its importance has been growing in the context of inflammatory and obstructive salivary disorders, particularly in the management of Sjögren's syndrome. Sjögren's syndrome is a chronic systemic autoimmune disease of multifactorial aetiology, not yet fully understood, which primarily affects exocrine glands. Clinically, it manifests as dryness of the eyes, mouth and other mucous membranes, and may also involve other systems, leading to complications such as arthritis, chronic fatigue and peripheral neuropathies.

Objectives: To critically analyze the efficiency and applicability of sialoendoscopy in the management of Sjögren's syndrome, both in the diagnostic context – through the early identification of ductal abnormalities – and in the therapeutic context, by assessing improvements in salivary flow, a reduction in symptoms, and its preventive role in the recurrence of inflammation.

Methodology: The methodology followed the PRISMA guidelines, with a literature search conducted in the PubMed, EBSCO, Wiley and ScienceDirect databases, considering studies published between 2014 and 2024. All four databases (PubMed, EBSCO, Wiley and ScienceDirect) were last searched on [December 31, 2024]. Randomized controlled trials and case series written in English that evaluated the use of sialoendoscopy in patients with Sjögren's syndrome were included. The search strategy was based on the keywords 'sialoendoscopy', 'salivary endoscopy' and 'Sjögren's syndrome', with symptomatic improvement as the primary outcome. The methodological quality and risk of bias of the included studies were independently assessed by two reviewers using the Joanna Briggs Institute (JBI) Critical Appraisal Checklists appropriate to each study design, with disagreements resolved by consensus. Given the methodological and clinical heterogeneity of the included studies, results were combined through a narrative synthesis, structured by outcome domain (diagnostic accuracy, salivary flow, symptom scores and safety).

Results: A total of 5 studies, comprising 170 participants, met the eligibility criteria and were

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included in the final qualitative synthesis. The results showed that sialoendoscopy is associated with a statistically significant improvement in stimulated (SWSF) and unstimulated (UWSF) salivary flow [reported in n = 3 studies; n = 114 participants], particularly when combined with intraductal irrigation using saline or corticosteroids. A significant reduction was observed in the oral dryness index (XI), the clinical oral dryness score (CODS) and the European League Against Rheumatism (ESSPRI) patient-reported symptoms index for Sjögren's syndrome [CODS: n = 3 studies / 114 participants; ESSPRI: n = 3 studies / 114 participants]. Studies with long-term follow-up demonstrated sustained clinical benefit. The rate of symptomatic improvement ranged from 75% to 87%, with a significant reduction in pain and episodes of glandular swelling. The technique demonstrated a favourable safety profile, with complications that were mostly transient and of low severity.

Conclusion: Sialoendoscopy is a promising and effective approach to the management of Sjögren's syndrome, particularly in patients with associated ductal obstruction. Although it does not alter the autoimmune course of the disease, it helps to preserve glandular function, reduce the burden of symptoms and minimize the need for more invasive procedures. However, the available scientific evidence is still limited by the small sample size and methodological heterogeneity of the included studies, and further multicenter studies with greater robustness are required.

The integration of sialoendoscopy into clinical practice, as part of a multidisciplinary approach, may optimize early diagnosis, improve patients' quality of life and reinforce a personalized therapeutic strategy in the management of Sjögren's syndrome.
