Eating Disorders Are Associated with Sialadenitis and Salivary Gland Hypertrophy

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Abstract

Background: Eating disorders (EDs), are linked with metabolic and inflammatory dysregulation. Little is known about the influence of EDs on salivary gland inflammation
Methods:A retrospective cohort study was performed using TriNetX Analytics Network) including records from 09/2021-2026. Adult patients (age≥18) with EDs were compared with matched controls. Propensity-score matching occurred on the basis of age and sex. Outcomes included sialadenitis and salivary gland hypertrophy (SGH). Binary logistic regression generated odds ratios (ORs), 95% confidence intervals (CIs), and p-values.
Results: Compared with matched controls, ED patients had elevated odds of sialadenitis and salivary gland hypertrophy. Despite statistically significant findings and clinical significant odds ratios, absolute risk remained low.
Conclusions: ED patients face an increased incidence of SGH and sialadenitis. Future investigations are warranted to further illuminate these relationships.

Introduction

- Eating disorders (EDs), including anorexia nervosa, bulimia nervosa, and binge-eating disorder, are associated with substantial nutritional, metabolic, inflammatory, and multisystem disturbances[1–5].
- EDs, particularly bulimia nervosa, have been associated with salivary gland abnormalities, including SGH[6-9].
- Parotid enlargement has been attributed to metabolic disturbances and autonomic dysfunction associated with ED behaviors, particularly purging[6–9]. However, existing literature has primarily focused on SGH in bulimia nervosa, and it remains unclear whether these associations extend across EDs more broadly[6–9].
- Dehydration, malnutrition, and reduced salivary flow may predispose patients to sialadenitis/salivary gland infection[10–14].
- Objective: This study sought to evaluate the association between eating disorder diagnosis and the subsequent development of sialadenitis and salivary gland hypertrophy (SGH)

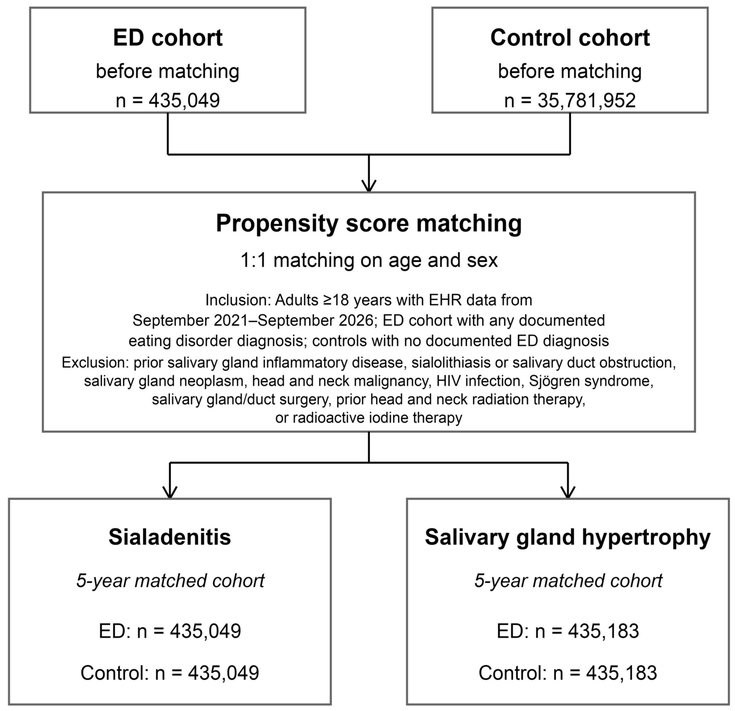


Figure 1. Inclusion/Exclusion Flowchart

Methods and Materials

- **Study design:** Retrospective cohort study using the TriNetX Analytics Network (TriNetX, LLC, Cambridge, MA,USA)
- **Population:** Adults ≥18 years old with an ED diagnosis (ICD-10-CM: F50-F50.25, F50.8-F50.89,F50.81-F50.813, R63.0) diagnosed September 2021 and September 2026 compared to matched healthy controls with no ED diagnosis
- **Matching:** 1:1 propensity score matching for age and sex.
- **Exclusions:** Prior salivary gland inflammatory disease, sialolithiasis or salivary duct obstruction, salivary gland neoplasm, head and neck malignancy, HIV, Sjögren syndrome, salivary gland/duct surgery, prior head and neck radiation, radioactive iodine therapy, SGH, or sialadenitis.
- **Outcomes:** Development of sialadenitis and SGH within 3- and 5-year follow-up.
- **Analysis:** Binary logistic regression with odds ratios (ORs), 95% confidence intervals (CIs), and p-values. Statistical significance was defined as $p<0.05$ (Figure 1)

Results

- ED patients demonstrated significantly greater odds of developing sialadenitis and SGH within both the 3- and 5-year follow-up periods. (Figure 2).
- Absolute risk remained low across cohorts (Table 1).

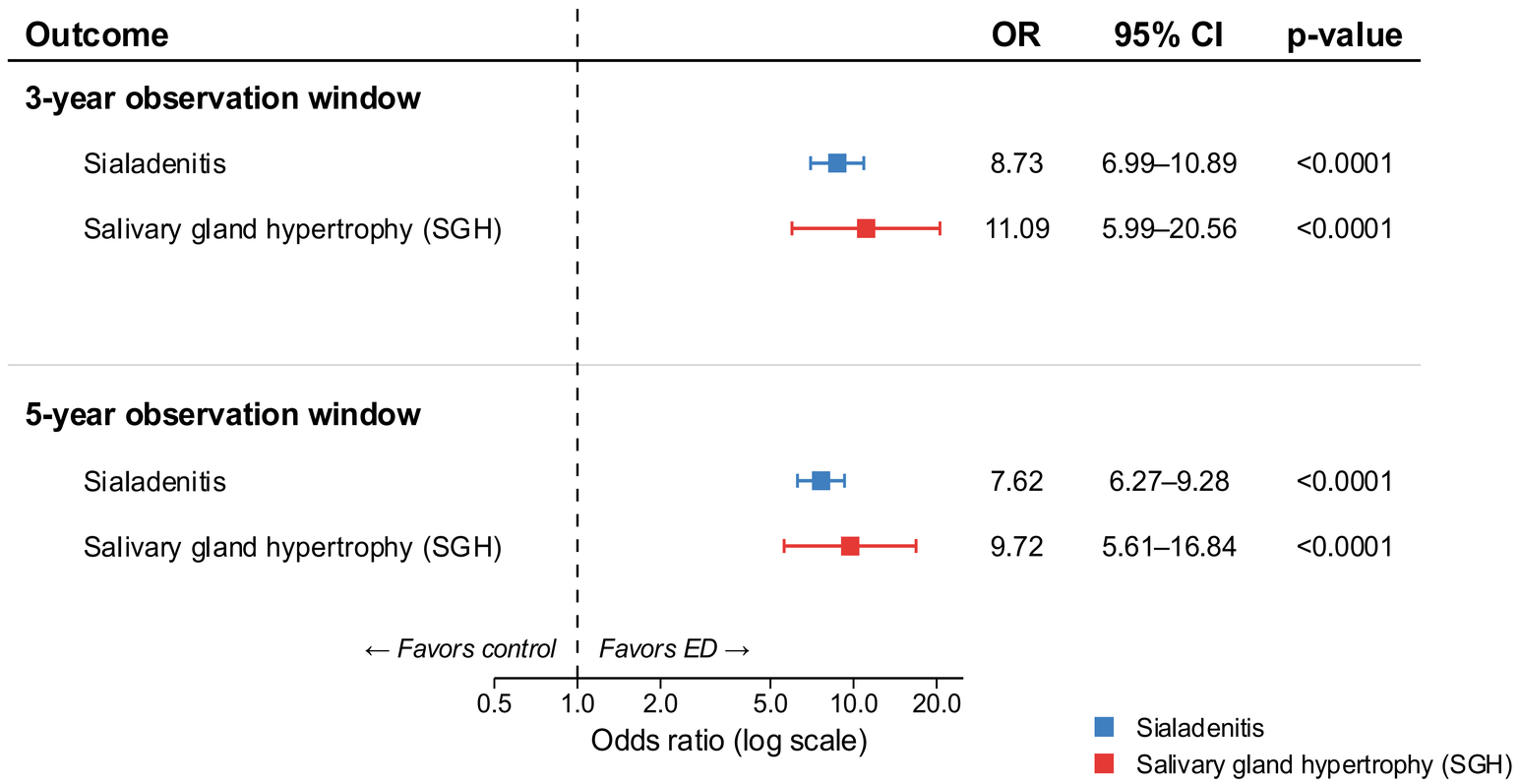


Figure 2. Comparison of Eating Disorder (ED) versus Control Number of Patients With Sialadenitis and Salivary Gland Hypertrophy

Discussion

- EDs, particularly those involving purging, have been associated with parotid enlargement, potentially related to metabolic and autonomic disturbances [6–9].
- Dehydration, malnutrition, and reduced salivary flow may promote salivary stasis and bacterial colonization, increasing susceptibility to sialadenitis[10–14].
- Shared nutritional, metabolic, and salivary dysfunction may contribute to the overlap between SGH and sialadenitis in EDs.
- Recognition of salivary gland pain, swelling, and other signs of SGH or sialadenitis may be particularly important in patients with EDs[17–18].
- **Limitations:** The retrospective design and limited propensity-score matching prevent causal inference. Potential confounders, including nutritional status, relevant medical conditions, ED severity, purging behaviors, medication use, and socioeconomic factors, could not be fully accounted for[19].

Conclusions

- ED diagnosis is correlated with SGH and sialadenitis.
- Further prospective research is needed to investigate potential nutritional, metabolic, inflammatory, and healthcare-related mechanisms underlying these associations.

Table 1. Comparison of Eating Disorder (ED) versus Control Number of Patients With Sialadenitis and Salivary Gland Hypertrophy

Sialadenitis					
Comparison	ED patients, % (n)	Control patients, % (n)	Risk Difference (95% CI)	Risk Ratio (95% CI)	p-value
All EDs (Within 3 years)	0.174% (n=758)	0.020% (n=87)	0.15% (0.141%, 0.167%)	8.713 (6.979, 10.876)	<0.0001
All EDs (Within 5 years)	0.198% (n=860)	0.026% (n=113)	0.17% (0.158%, 0.186%)	7.611 (6.256, 9.259)	<0.0001
Salivary Gland Hypertrophy (SGH)					
Comparison	ED patients, % (n)	Control patients, % (n)	Risk Difference (95% CI)	Risk Ratio (95% CI)	p-value
All EDs (Within 3 years)	0.028% (n=122)	0.003% (n=11)	0.03% (0.020%, 0.031%)	11.091 (5.984, 20.556)	<0.0001
All EDs (Within 5 years)	0.031% (n=136)	0.003% (n=14)	0.03% (0.023%, 0.034%)	9.714 (5.604, 16.839)	<0.0001

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