



## GNATOLOGICAL AND ELECTROMIOGRAPHICAL CHARACTERIZATION OF A SAMPLE OF PATIENTS AFFECTED BY RECURRENT PAROTITIS ASSOCIATED TO MASSETER HYPERTROPHY

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Recurrent parotitis (RP) is an inflammatory condition of the parotid gland characterized by repeated episodes of swelling, usually unilateral, often occurring during meals and more frequently in the morning. Its etiology is multifactorial and, in some cases, RP has been associated with masseter muscle hypertrophy (1,2). The possible involvement of masticatory muscle dysfunctions and temporomandibular disorders (TMD) in these patients has been poorly investigated. A comprehensive assessment of muscle-articular function and psychosocial factors may help clarify this relationship and support more targeted therapeutic strategies. The aim of this study was to describe the gnathological characteristics of patients with RP using the Diagnostic Criteria for Temporomandibular Disorders (DC/TMD), complemented by standardized surface electromyography of masticatory muscles (ssEMG). At the Otolaryngology Department of Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico in Milan, patients aged >18 years with a history of recurrent uni/bilateral parotid swelling, tender/increased masseter consistency on palpation, negative ultrasound and sialo-MRI for salivary obstructions but suggestive of masseteric ductal kinking were enrolled. Evaluations included DC/TMD (3) (Axis I: clinical exam and symptom questionnaire; Axis II: psychosocial status, anxiety/depression), chronic pain grading (CGPS/VAS), jaw functional limitation scale (JFLS), PHQ-4, and bilateral ssEMG (4) on anterior temporalis (TA) and masseter (MM) for Percentage Overlapping Coefficient (POC%), Asymmetry Index, Torque Coefficient, Activation Index and Impact

Coefficient obtained during cotton roll/clench acquisition. Masticatory repeatability was also assessed during a 15-second chewing task. Sixteen patients (13 females, 3 males; mean age  $48.75 \pm 17.35$  years, range 19-66) showed pain in 69% (11/16; VAS last 30 days: 5.18; CGPS past 6 months: 5-6 days to constant), mainly in parotid-masseteric area (100%), aggravated by chewing (50%), with headache (50%), joint noises (56%, mostly unilateral), and onset 1.5-7 years prior. Daily limitations (JFLS: 50%), anxiety (PHQ-4: 50% nearly daily, total scores >7 in 25%, up to 12), and parafunctions (94%: clenching/bruxism) were prevalent. DC/TMD diagnoses: muscular disorders (12.5%), articular disorders (12.5%) both (56.25%), none (18.75%). ssEMG showed POC values compatible with TMD values, for both TA (74.52%) and MM (75.38%), with a mean POC of 78.57%. Asymmetry (2.08) and torque (0.58) indices were within normal limits, while activation values (-11.44) indicated a mild temporalis predominance. Impact values averaged 77.37% (MM: right 73.59%, left 71.18%; TA: right 90.13%, left 83.01%). Overall, masticatory muscle function appeared within physiological ranges, with no parameters exceeding normal limits. In conclusion, RP patients with masseter hypertrophy commonly exhibit TMD signs, persistent pain, functional impairments, anxiety, and maladaptive oral habits, corroborated by ssEMG showing moderate temporalis predominance with anteriorized center of activity, likely due to pain during chewing. The combined use of DC/TMD and ssEMG provides an effective approach for gnathological and neuromuscular profiling, supporting a multidisciplinary management strategy for RP.

**Keywords:** idiopathic recurrent parotitis, myalgia, arthralgia, standardized surface electromyography