

## Characterization of consultations for odontogenic abscesses in a major Chilean hospital.

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**Abstract:** Objectives: To characterize consultations for odontogenic abscesses at the Dental and Maxillofacial Unit of the Public Emergency Hospital in Santiago, Chile. Methodology: Descriptive study, involving consecutive sampling of patients with diagnosis of odontogenic abscess, conducted between August and September 2016. Descriptive statistics were performed to determine the frequency of diagnosis, affected tooth, sex and need for hospitalization. Results: Odontogenic abscesses accounted for 6.3% (n=414) of a total of 6,535 consultations. Males represented 59%; 42% of odontogenic abscesses presented in molars and maxillary premolars. The vestibular space was the most frequently affected anatomical space (50%), associated in 53% of the cases to submucosal abscesses. Ninety-eight per cent of patients were successfully treated on an outpatient basis, 2% required hospitalization, mainly associated to abscesses involving the deep submandibular space. Conclusion: Odontogenic abscesses account for a low percentage of dental emergencies at the Public Emergency Hospital in Santiago, Chile. Most cases receive outpatient treatment.

*Keywords:* Dental abscess; hospital dental unit; dental caries; odontogenic infection.

### INTRODUCTION.

Odontogenic infections are caused by microorganisms, originating from structures that form the tooth and the periodontium.<sup>1</sup> They initially affect the alveolar process, spreading through the medullary cavity, outer cortical tissues, and periosteum to neighboring or distant anatomical structures or spaces.<sup>2</sup> These infections include pulp and periapical inflammatory pathologies and abscesses, and caries is their main etiology.<sup>3</sup> Morbidity and mortality range from localized processes with low severity to severe infections affecting noble structures that quickly lead to life-threatening conditions.<sup>3</sup>

Over the past 70 years, improved oral hygiene habits have reduced the incidence and mortality from odontogenic infections.<sup>1,3</sup> However, they are still cause of frequent consultation in emergency services in different countries,<sup>4,5</sup> with significant associated costs.<sup>4</sup>

“Ambulatory Urgent Dental Care” is a Chilean health guarantees program covering the treatment of patients with many pathologies, including odontogenic abscesses. However, epidemiological characteristics of emergency unit consultations resulting from these infections are unknown. Research in this area can help improve public policies in oral health for these patients, especially taking into account complications associated with abscesses in the maxillofacial region.

The objective of this study is to characterize the consultations for odontogenic abscesses at the Dental and Maxillofacial Unit of the Public Emergency Hospital (DMU-PEH) in Santiago, Chile.

## MATERIALS AND METHODS.

A descriptive study of consultations for odontogenic abscesses at the DMU-PEH was carried out. This study was approved by the Scientific Ethical Committee of the Central Metropolitan Health Service (No. 48/16), and all participants signed an informed consent form. Sampling was consecutively selected and included all patients treated

at the DMU-PEH from August 1 to September 30, 2016. Subjects had been diagnosed with odontogenic abscesses (acute dentoalveolar abscess, chronic dentoalveolar abscess, subperiosteal abscess, subcutaneous abscess, deep space abscess and phlegmon). Exclusion criteria were not considered.

Clinical diagnosis of each patient was recorded according to the Emergency Clinical Guide provided by the Chilean Ministry of Health.<sup>4</sup> Variables measured included sex, age, diagnosis, affected tooth and need for hospitalization. All were registered in an ad-hoc clinical record. Data were tabulated in an Excel spreadsheet (Microsoft Corp., USA) and analyzed with STATA 14.2 (Stata Corp., USA).

**Table 1.** Description of odontogenic abscesses according to sex, age, diagnosis, dental group and need for hospitalization.

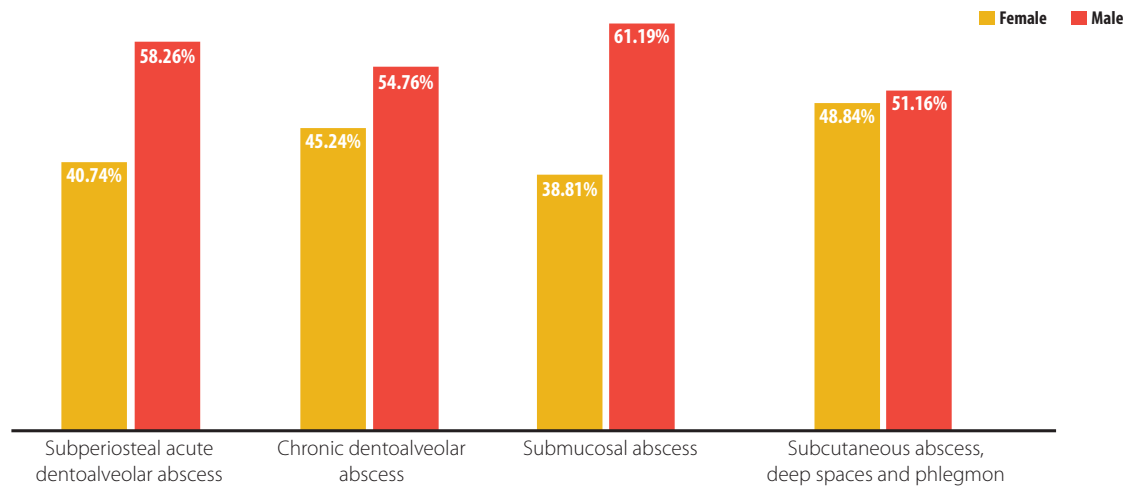
		n	%
Sex	Female	169	40.8
	Male	245	59.2
Age	15-25 years	83	20.0
	26-35 years	102	24.6
	36-45 years	69	16.7
	46-50 years	56	13.5
	51 years or older	104	25.1
Diagnosis	Acute dentoalveolar abscess	93	22.5
	Chronic dentoalveolar abscess	44	10.6
	Submucosal abscess	219	52.9
	Subcutaneous abscess, deep spaces and phlegmon	43	10.4
	Subperiosteal abscess	15	3.6
Dental group affected	Mandibular molars and premolars	160	38.6
	Mandibular canines	6	1.4
	Mandibular incisors	7	1.7
	Molars and maxillary premolars	172	41.5
	Maxillary canines	28	6.8
	Maxillary incisors	40	10.0
Need for hospitalization	Yes	8	2.0
	No	406	98.0

## RESULTS.

Odontogenic infections accounted for 72% (n=4,673) of the 6,535 consultations at the DMU-PEH registered from August to September 2016. Acute/chronic apical periodontitis was the most frequently diagnosed pathology (60.6%), while 6.5% (n=414) corresponded to odontogenic abscesses. Table 1 shows the characterization

of odontogenic abscesses according to sex, age, diagnosis, dental group and need for hospitalization. The percentage distribution of odontogenic abscesses according to sex is shown in Figure 1. A “mild” risk of airway obstruction according to the Flynn scale<sup>5</sup> was observed in 97.1% (n=401) of patients. Submandibular space involvement was more frequently associated with hospitalization.

**Figure 1.** Distribution of odontogenic abscesses by sex.



## DISCUSSION.

The results obtained are different from those reported in Italy, where odontogenic abscesses accounted for only 3% of emergency dental unit consultations.<sup>6</sup> Differences could be explained by the limited access to oral health care in Chile. Distribution by sex is similar to findings reported in another Italian study,<sup>7</sup> but different from studies conducted in India, where the male:female proportion was 2:1.<sup>2</sup>

Mandibular molars were the most frequently affected by odontogenic infections reported by Boffano *et al.*<sup>7</sup> However, our findings show that odontogenic infections affected primarily maxillary molars. First molars were the most affected in both cases, probably because they are the first teeth to erupt. Severity assessment is of utmost

importance when determining the need for hospitalization, as involvement of the airway and/or vital organs are high risk factors. Submandibular abscess (moderate risk) was the diagnosis most frequently associated with the need for hospitalization, in agreement with the literature.<sup>6</sup>

Obtaining the sample from a single hospital is one of the limitations of this study and, although it serves a large population, its selection was arbitrary and does not necessarily represent the reality in Chile at a national scale.

## CONCLUSION.

Odontogenic abscesses account for a low percentage of dental emergencies at the Public Emergency Hospital in Santiago, Chile. Most cases receive outpatient treatment.

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