

Original Article**Association between Peritonsillar Abscess and Molar Caries***M. Shayani Nasab\* MD, F. Behnod MD\*, F. Farehani MD\*, F. Hashemian MD\****ABSTRACT**

**Background:** Peritonsillar abscess is the most common deep neck infections that are related with periodontal disease which has the same pathogenesis. We determined the relationship between peritonsillar infection and molar caries.

**Methods:** In a cross-sectional study, 33 consecutive patients whom referred to Hamadan university clinic of otolaryngologic for peritonsillar abscess were examined by otolaryngologist and dentist who investigated relationship between peritonsillar infection and molar caries.

**Results:** There were 27 males and 6 females with mean age  $26.7 \pm 7$  years. The frequency caries on ipsilateral peritonsillar infection sides was in relation to molars caries on opposite sides (control group). This correlation was significant with odds ratio 2.5.

**Conclusion:** Molar caries were seen 2.5 times more likely to have peritonsillar infection compared with normal molar sides.

**Key Words:** Peritonsillar abscess, Infection, Periodontal disease, Dental caries

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Peritonsillar abscess is the most common deep neck infection that may be complicated by Para pharyngeal infection. In the pre-antibiotic era, deep neck infections had been associated with tonsillitis and pharyngitis but recently, poor dental hygiene and drug abuse have become the most common causes of them. It has been known that microbial pathogenesis of peritonsillar infection and periodontal disease is the same.

Anatomy of tonsil and lower third molar are in close relation to microbiology of peritonsillar infection and periodontal disease, and caries act as reservoir for peritonsillar abscess<sup>1-5</sup>. In the developed countries, the incidence of dental caries in young population has been decreased, and periodontal disease was more important than dental caries in young and early adult ages

<sup>6</sup>. In the developing countries, dental caries are common and may be related to peritonsillar infection.

This study determined whether a relationship existed between peritonsillar infection and molar caries.

**Subjects and Methods**

In a prospective study, 33 patients with peritonsillar infection were studied. They were referred to otolaryngology department of Hamadan university hospital, Iran in 2002. A dentist examined molar caries and scored those regarding involved dental surfaces as; 1 (mild), 2 (moderate) and 3 (severe)(Table1). Scaling results were compared by t-test for paired differences.

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**Table 1.** Scaling for molar caries

Score	Dental caries
1 (mild)	Fissures caries or one surface of one molar tooth
2 (moderate)	Surfaces cares of one molar tooth or/and fissures caries in greater than one molar tooth
3 (severe)	Surfaces caries in greater than one molar tooth

## Results

There were 27 males and 6 females with mean age of 26.7+\_7 years, ranged from 15 to 36 years. From 33 patients, 29 and 4 patients had right and left peritonsillar infections, respectively (66 mandibular molar sides).

From peritonsillar infected side, 30 patients (91%) had moderate to severe dental caries but, 12 patients (0.34%) from opposite molar sides had mild to moderate dental caries. One patient had diabetes mellitus and another had third molar extraction of peritonsillar infection side, three days before admission.

A significant correlation was found between molar caries of peritonsillar infection sides and control group ( $P=0.000$ ) with odds ratio of 2.5 (%95 confidence interval). In other words, molar caries sides was 2.5 time more likely to have peritonsillar infection compared with normal molar sides.

## Discussion

Traditionally, peritonsillar infection had been thought that occur in patients with recurrent tonsillitis, chronic tonsillitis and rarely in infection mononucleosis <sup>7</sup>.

Its pathogenesis, as described in textbooks, is a direct communication and progression of acute exudative tonsillitis. However, more recently researches have shown that its origin may be from weber glands (accessory salivary glands of tonsillar fossa) rather than extension from acutely inflamed tonsil <sup>8,9,10</sup>.

At the first time in 1981, Fried and Forrest found a relationship between peritonsillar abscess and severe dental caries or periodontal disease <sup>11</sup>. The frequency of patients with tonsillitis combined with pharyngitis or with all respiratory tract infections was significantly increased during two weeks before acute pericoronitis and one week after it. During the first week after third molar extraction, respiratory tract infections was significantly increased <sup>12-15</sup>.

Leung et al reported that the micro flora of pericoronal pockets of symptom free lower third molars resembled the spices causing gingivitis and periodontitis <sup>16</sup>. Also, the relation between peritonsillar abscess and periodontal disease has been shown <sup>17</sup>. Perhaps in developing countries, dental caries is more common than periodontal disease in young adult population.

We conclude that molar caries associate with peritonsillar infection. Also, dental hygiene and decrease of dental caries can prevent peritonsillar infection. However, more studies are needed for causal relationship and further description.

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