

## Department of Dentistry

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### General Summary

1. Morphological and histological studies of the temporomandibular joint  
We continued our anatomical and histological studies of the temporomandibular joint (TMJ) and articular disk in Mammalia.
2. Clinical studies of temporomandibular disorders  
We continued our studies to investigate, by means of a screening questionnaire, the relationship between temporomandibular disorders (TMDs) and sex, age, and job content.

### Research Activities

#### *Morphological and histological studies of TMJ*

1. Anatomical notes for TMJ arthroscopy  
The TMJ arthroscopy technique was developed by Ohnishi in 1970. Thereafter, many clinical and basic reports regarding the safety of TMJ arthroscopy have been published. The possible complications of the surgery, however, should not be forgotten. We reported on the anatomical characteristics of the TMJ for the express purpose of arthroscopy. Because many important organs are present around the TMJ, better knowledge of anatomical characteristics will help avoid severe complications, such as injury to the cranium, tympanic membrane perforation, and laceration of the external auditory canal. Therefore, the dissection of fresh cadavers is important. We reported results of fresh-cadaver dissection around the TMJ and described a safe insertion technique for arthroscopy.

#### *Clinical studies of TMDs*

1. A pilot questionnaire study of the relationship between descriptions of job contents by sex and screening for TMDs in dental patients at general dental offices in Tokyo  
We previously reported the results of a screening questionnaire regarding the prevalence and contributory factors of TMDs for persons working in Tokyo. Multivariate logistic regression analysis revealed that significant contributory factors for TMD in men were a feeling of fatigue (odds ratio [OR]=1.55) and in women were feelings of depression (OR=1.37) and fatigue (OR=1.30). The purpose of this pilot study was to investigate sex-related concerns between job contents and TMD. With the cooperation of the Tokyo Dental Association, we performed a questionnaire survey for applicants of dental check-ups at 13 general dental offices in Tokyo. Responses were obtained from 253 subjects and were used as secondary data for analysis. Because we excluded subjects who replied that their commuting time was 0, a total of 180 subjects were included. A questionnaire included 4 TMD screening questionnaire items, sex, age, and 9 job-content

questions, and the answers were subjected to multivariate logistic regression analysis. We found that mean age did not show sex differences. Regarding differences in job contents by sex, men had significantly longer driving time and meeting time, and women had a significantly longer time before going to bed (correction value:  $p=0.05/9=0.0062$ ). The personal computer (PC) operation time did not differ between sexes. Job contents differed between subjects who had TMD and those who did not. Multivariate logistic regression analysis showed that PC operation time was significant ( $p=0.031$ ;  $OR=1.85$ ) only for women. These findings suggest that sex and age affect the relationship between TMD and job contents. Although no direct relation was confirmed, using a PC at work was identified as contributory factor for TMD in women.

## 2. An evaluation of symptoms at initial visit in patients with TMDs: Comparison between patients younger than 45 years and patients 45 years or older

The frequency of osteoarthritis and sensibility for pain in geriatric patients with TMD are said to differ from those in young or middle-aged patients. To clarify the pathology of TMD between geriatric patients and young or middle-aged patients, we examined the frequency of TMD symptoms in geriatric patients at the first examination and compared the findings to those in young or middle-aged patients. At the first examination, the frequency of TMJ pain when the chin was pressed and tenderness of the masticatory muscles differed between the patient groups. Logistic regression analysis showed that the TMJ pain when the chin was pressed was less ( $OR=0.574$ ) and that the tenderness of the masticatory muscles was greater ( $OR=1.832$ ) in geriatric patients. The results show that the sensibility for pain of the TMD at the first examination differs between geriatric patients and young or middle-aged patients.

## 3. Pathology and treatment of TMDs in geriatric patients

To clarify the pathology of TMDs in geriatric patients, we examined the frequency of tenderness of the TMJ and of the masticatory muscles and the relationship between missing molars and condylar head abnormalities at the first examination, assessed the efficacy of treatment, and compared the findings to those in young or middle-aged patients. The results were as follows. At the first examination, the frequency of TMJ tenderness was high both in young or middle-aged patients and in geriatric patients. The frequency of TMJ pain when the chin was pressed and of tenderness of the masticatory muscles differed between the patient groups. Logistic regression analysis showed that the TMJ pain when the chin was pressed was less and that the tenderness of the masticatory muscles was greater in geriatric patients. The frequency of condylar head abnormalities was greater in geriatric patients than in young or middle-aged patients. The high frequency of condylar head abnormalities in patients with missing molars suggests that occlusion is a factor in osteoarthritis. Assessment of the efficacy of treatment for the same types of TMJ disorder showed that conservative treatment, mainly guidance in regard to diet and daily life, was equally effective for geriatric patients and for young or middle-aged patients.

## Publications

**Sugisaki M, Takano N<sup>1</sup>, Hayashi K, Saito T, Kuruma E, Kino K<sup>2</sup>, Nishiyama A<sup>2</sup>** (<sup>1</sup>*Tokyo Dent Assoc, <sup>2</sup>Tokyo Med Dent Univ*). A pilot study on the relationship between descriptions of job contents by gender and screening for temporomandibular disorders in dental patients at general clinical offices in metropolitan Tokyo using a questionnaire (in Japanese). *Nihon Gakukansetsu Gakkai Zasshi*. 2011; **23**: 143-8.

**Tsukagoshi K<sup>1</sup>, Nishiyama A<sup>1</sup>, Kino K<sup>1</sup>, Sugisaki M, Haketa T<sup>1,2</sup>** (<sup>1</sup>*Tokyo Med Dent Univ,*

<sup>2</sup>*Haketa Dental Office Clin*). The factors which affects temporomandibular disorders-related pain (in Japanese). *Nihon Koku Ganmentsu Gakkai Zasshi*. 2011; **4**: 47-55.

## Reviews and Books

**Ikai A.** Pathology and treatment of the geriatric patients with temporomandibular disorders (in Japanese). *Tokyo Jikeikai Ika Daigaku Zasshi*. 2012; **127**: 41-8.