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Mandibular torus in Japanese people

Hiroyuki Yamada*

Department of Oral Anatomy, School of Dentistry, Aichi-Gakuin University, Japan

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***Corresponding author:** Hiroyuki Yamada, Ph.D. 15-16 Obatanaka 2 Chome, Moriyama-Ku, Nagoya 463-0013, Japan. (Home)
E-mail: ymd_20hiro4@yahoo.co.jp

Abstracts

The frequency of occurrence of mandibular torus was nearly 80% in individuals during the Jomon period, when people ate deer and wild boar. Over time, however, this frequency has decreased due to the softening of food, and in modern times it has decreased to nearly 26%. Recently, however, it has increased to 74%. The reason for this is thought to be that modern humans have a longer life span than the Jomon, and the duration of use of the teeth for chewing has increased accompanyingly. Therefore, it is thought that the force of chewing objects with the teeth over a long period of time led to the accumulation of additions to the mandible, resulting in the development of a mandibular torus.

Introduction

I overheard an interesting story from an orthodontist. During an academic conference visit to Europe, he was asked the following question by a native (Egyptian) dentist at a reception after the conference. 'Why do the Japanese have a well-developed mandibular torus? In our country, we rarely see mandibular torus. Palatal torus and mandibular torus may not be very common for people from abroad. However, for contemporary Japanese dentists who see their patients' mouths on a daily routine basis, this is not so unusual (Figure 1).

Figure 1: Mandibular torus. (from the Internet)

Geographic Distribution of Mandibular torus

It is especially common in older people, both men and women. Mandibular torus occurs with a frequency of more than 50% in people living in the subarctic and northward, but rarely in Europeans, American Caucasians, American Blacks, African Blacks, and South Pacific peoples living in regions other than those mentioned above. It seems that there is a difference in this trait between European and African populations and Asian populations.

History of Mandibular torus in Japan

When we examine the frequency of mandibular torus in Japanese people over time, we find that during the Jomon period nearly 80% of the population had mandibular torus, probably because they ate hard meat such as deer and wild boar by boiling and cooking it (Figure 2). However, as time progressed, the frequency of these torus decreased, and in the Modern period, the frequency decreased to nearly 26%. Surprisingly, however, it has increased to 74% in contemporary individuals.

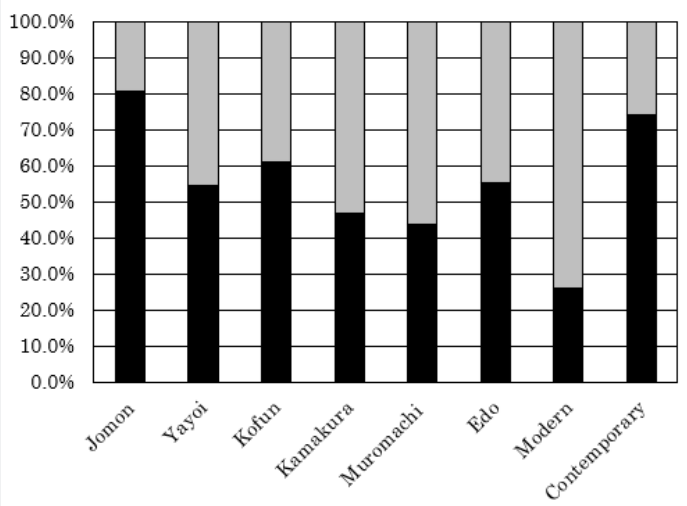

Figure 2: Change in mandibular torus in different periods of time. Jomon (12,000BP-3,000(2,500)BP); Yayoi (3,000(2,500)BP-AC3C); Kofun (3C-12C) ; Kamakura (12 C-14 C); Muromachi (14C-17C); Edo (17C-19C); Modern (ca. 1900). (Igarashi [2]. Modifications)

Discussion and Conclusion

Although we believe that the development and frequency of mandibular torus in the oral cavity gradually increases with the consumption of hard foods, we are surprised to find the opposite relationship, that is, that even contemporary Japanese people who consume a lot of soft foods in their daily lives often develop a well-developed mandibular torus.

Researcher who have examined this inverse relationship speculates that the difference may be due to the age of the material studied [1,2]. This is because mandibular torus is positively correlated with age, and it develops with age until the age of 50s. She believes that contemporary person has a longer life span than the Jomon people, and the period of use of teeth for mastication has increased along with it, so that the accumulation of addition to the mandible due to chewing with the teeth for a long period of time has led to the development of the mandibular torus [1,2]. This may be one of the phenomena caused by the longer life span of contemporary people in Japan

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