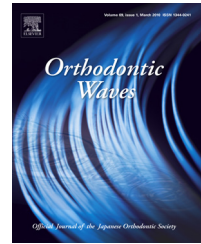


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A collaborative survey on occlusion after orthodontic treatment in patients with unilateral cleft lip and palate in Japan[☆]

Mikiko Mano^{a,*}, Yasuo Ishiwata^b, Toshikazu Asahito^c,
Teruo Sakamoto^d, Tadashi Morishita^e, Yuri Yamamoto Oonishi^f,
Toshio Iwata^g, Naoto Suda^a, Takafumi Susami^h, Isao Saitoⁱ

^a Division of Orthodontics, Department of Human Development and Fostering, Meikai University School of Dentistry, Saitama, Japan

^b Ishiwata Orthodontic Clinic, Kanagawa, Japan

^c Division of Orthodontics, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan

^d Department of Orthodontics, Tokyo Dental College, Chiba, Japan

^e Our Lady of Snow Social Medical Corporation St. Mary's Hospital Orthodontic Department, Fukuoka, Japan

^f Department of Oral and Maxillofacial Surgery, Osaka Medical Center and Research Institute for Maternal and Child Health, Osaka, Japan

^g Division of Orthodontics, Department of Oral Science, Kanagawa Dental University, Kanagawa, Japan

^h Department of Oral-Maxillofacial Surgery, Dentistry and Orthodontics, The University of Tokyo Hospital, Tokyo, Japan

ⁱ Division of Orthodontics, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan

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ABSTRACT

Purpose: A nationwide collaborative survey was performed in Japan to evaluate the recent treatment outcomes on occlusion after orthodontic/orthognathic treatment for patients with unilateral cleft lip and palate (UCLP).

Methods: A retrospective collaborative survey was performed. Twenty-five facilities, including 14 university hospitals, examined their orthodontic records and cast models of patients with UCLP. Using common format, information of 492 non-syndromic UCLP cases were reported. Patients with syndromic UCLP or congenital missing maxillary central incisors were excluded. Basically, each facility reported their most recent 30 cases.

Results: Of 492 cases, 330 cases (67.1%) were reported from 11 facilities, suggesting that orthodontic treatment for patients with CL/P was not fully centralized in Japan. Secondary alveolar bone grafting and orthognathic surgery were performed in 92.7% and 22.5% of cases, respectively. A significantly higher rate of orthognathic surgery was seen in cases reported from university hospitals (27.5%) than other facilities (14.8%). Average age at the end of active orthodontic/orthognathic treatment was 18.5 years. The lateral incisors on cleft sides were congenitally missing in 50.2% and displayed microdontia in 42.9% of cases. After orthodontic treatment, the central incisors and the canines were aligned without interdental spaces in 55.3% of cases. The positive anterior overjet was seen in 88.2%, and the centerline

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* Corresponding author at: Division of Orthodontics, Department of Human Development and Fostering, Meikai University School of Dentistry, 1-1 Keyaki-dai, Sakado, Saitama 350-0283, Japan.

E-mail address: mmano@dent.meikai.ac.jp (M. Mano).

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discrepancies between maxillary and mandibular incisors within 1/4 of mandibular incisor width was in 74.8% of cases.

Conclusions: The final occlusion after orthodontic treatment was satisfactory in most cases. Findings of this study are referable for improving standard Japanese orthodontic care for patients with CL/P.

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1. Introduction

In the treatment for patients with cleft lip and/or palate (CL/P), standardized treatment is valuable for providing successful outcome together with minimum burden to the patients [1-3]. During the process of standardization, it is essential to recognize the precise treatment outcomes performed for patients. Regarding the treatment outcomes of primary surgery in CL/P patients, multifacility surveys have been reported, such as those of Eurocleft, Americleft, Dutchcleft and the Clinical Standards Advisory Group (CSAG) in the United Kingdom (UK) [4-9]. However, there is only limited information on occlusal outcomes after orthodontic/orthognathic treatment, which requires multidisciplinary intervention [1,10,11].

Many Japanese patients with CL/P have a severe intermaxillary relation [12-14] and comprehensive orthodontic treatment with or without orthognathic surgery is frequently required. Since most Japanese medical/dental facilities have

treated a relatively small number of patients in each facility [15], the information about occlusal outcomes of the orthodontic treatment is lacking. Thus, we conducted a nationwide collaborative survey to clarify the recent occlusal outcomes after orthodontic/orthognathic treatment in Japan.

2. Materials and methods

This study was carried out by accessing orthodontic records describing occlusal outcomes from April 1st, 2004 to March 31st, 2014 after orthognathic/orthodontic treatment of non-syndromic UCLP at Japanese facilities. The treatment outcomes were reported using a common format. Each facility examined their own orthodontic records and cast models, and provided treatment records of the most recent 30 cases. This was because if one or some facilities reported treatment outcome based on large number of cases, it might affect the entire conclusion of the survey. Thus, we limited maximum 30

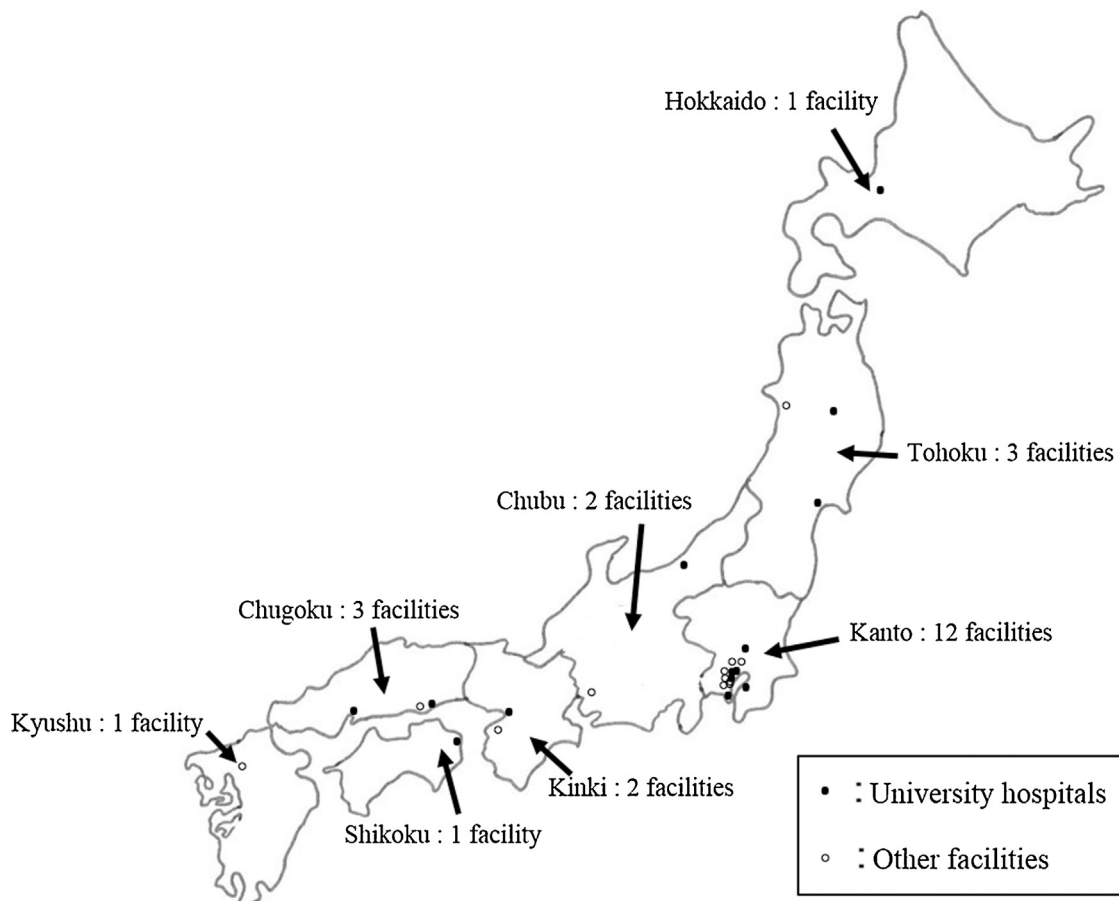


Fig. 1 – Japanese map showing 25 facilities participated in this study.

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