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Original Article

Nonsyndromic supernumerary teeth in patients in National Taiwan University Children's hospital

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Received 16 July 2022

Available online 7 August 2022

KEYWORDS

Nonsyndromic
supernumerary
teeth;
Panoramic
radiograph;
Erupted;
Unerupted;
Mesiodens

Abstract *Background/purpose:* A literature review reveals limited data for supernumerary teeth in Taiwan. This study aimed to analyze the characteristics of nonsyndromic supernumerary teeth in patients in the National Taiwan University Children's Hospital.

Materials and methods: This retrospective study analyzed the nonsyndromic supernumerary teeth in 1280 patients (710 boys and 570 girls) based on examination of mainly panoramic radiographs and related radiographs. Chi-square test was used for trend analysis.

Results: The incidence of nonsyndromic supernumerary teeth was 11.25% (179 supernumerary teeth in 144 of the 1280 patients). There was a male predominance (4.33: 1, $P < 0.0001$) for our 144 patients. Most supernumerary teeth were single (63.69%), conical-shaped (78.77%), and unerupted (77.09%). Supernumerary teeth also tended to be located in the premaxilla (93.85%), fully developed (51.40%), invertedly oriented (45.25%), sagittally located in a

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<https://doi.org/10.1016/j.jds.2022.07.015>

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palatal/lingual position (67.60%), and adjacent to the root and root apex of permanent teeth (70.39%). The supernumerary teeth with a normal orientation (64.52%) had a high potential to erupt into the oral cavity, but the majority of the supernumerary teeth with a transverse orientation (97.22%) or an inverted orientation (100%) were unerupted.

Conclusion: The nonsyndromic supernumerary teeth occur most commonly in male patients with a male to female ratio of 4.33: 1. The incidence of nonsyndromic supernumerary teeth in our 1280 patients is 11.25%, and the most frequent location of supernumerary teeth is the anterior maxillary region. More than three quarters of supernumerary teeth are conical-shaped or unerupted. Inverted supernumerary teeth are all embedded in the jawbones.

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Introduction

Supernumerary teeth are additional teeth or tooth-like structures to the normal dentition and can be found in almost any region of the dental arch. Single, double, or multiple supernumerary teeth that occur in one or both jaws may be erupted or unerupted and unilateral or bilateral.¹ The prevalence of supernumerary teeth varies from 0.1% to 3.8%. Besides, the supernumerary teeth occur more commonly in the permanent dentition.^{2–4} Most supernumerary teeth are located in the premaxillary region. They are classified according to their form and location. General dentists may encounter supernumerary teeth, either as an incidental finding on a dental X-ray or as a cause of finding an unerupted maxillary central incisor (in case of the presence of a mesiodens). However, the supernumerary teeth may also be found in the mouth after a spontaneous eruption. The presence of the supernumerary teeth may cause various clinical problems such as malalignment of teeth. Treatment of the supernumerary teeth depends on the type and location of supernumerary teeth and their effect on the adjacent teeth.^{5,6}

Supernumerary teeth can be classified according to their chronology, location, morphology, and orientation. They can be classified chronologically as pre-deciduous, similar to permanent teeth and post permanent or complementary, topographically as mesiodens, parapremolar, paramolar, and distomolar, morphologically as conical, tuberculate, supplemental (eumorphic), and odontome, and based on orientation as vertical, inverted, and transverse.⁷ Although supernumerary teeth usually do not cause any serious complications, they may result in delayed or failed eruption of permanent teeth, displacement, crowding, root resorption, dilaceration, loss of viability of adjacent teeth, periodontal problems, dental caries due to plaque retention in inaccessible areas, incomplete space closure during orthodontic treatment, and pathological problems such as odontogenic cyst formation, ameloblastoma, odontoma, and fistula. In addition, they may also interfere with alveolar bone grafting and implant placement.⁵

Supernumerary teeth are usually detected as an incidental finding during radiographic examination such as panoramic radiography.⁵ Fortunately, the National Health Insurance (NHI) was implemented in Taiwan in 1995, and the penetration rate has reached 99.9% of the entire

population in 2014.^{8,9} In addition, panoramic radiography is a regular payment item for dental visits of NHI system. A literature review reveals limited data for supernumerary teeth in Taiwanese children.¹⁰ However, we currently have the opportunity to extract the dental records of panoramic radiography from a dental institution and to analyze the prevalence and characteristics of nonsyndromic supernumerary teeth in a group of dental patients in the National Taiwan University Children's Hospital. We hope that the results of this study can aid us in not only the clinical diagnosis and treatment of the supernumerary teeth but also the future research of the supernumerary teeth.

Materials and methods

This study used the retrospective analysis for all nonsyndromic patients who had received a panoramic radiographic examination at the Dental Clinics of the National Taiwan University Children's Hospital (Taipei, Taiwan) from January 2016 to September 2016 (1280 patients; 710 boys and 570 girls). A manual database search of digital panoramic radiographs revealed 179 supernumerary teeth in 144 of the 1280 patients. The radiographs including any related periapical, occlusal, and cone-beam computed tomography (CBCT) radiographs were also reviewed to determine the position and direction of the supernumerary teeth.

Data were collected from the radiographs and other patient records including the age, gender, and the following nine characteristics of supernumerary teeth: (1) number; (2) location (anterior or posterior region of the maxilla or mandible); (3) erupted or unerupted; (4) shape (conical, tuberculate, or supplemental); (5) primary, mixed or permanent dentition; (6) sagittal position (buccal/labial, within the arch or palatal/lingual); (7) orientation (normal, transverse or inverted); (8) vertical relation to the adjacent permanent teeth (at the level of incisal edge, crown, root or root apex); and (9) developmental stage of the supernumerary teeth (partial crown, complete crown, partial root or complete root formation).

All data obtained from the interpretations of radiographs and related patient records were stored in excel files and used for statistical analysis. The distributions of supernumerary tooth characteristics and correlations were analyzed by chi-square test for trends. The result was considered to be significant if the *P*-value was less than 0.05.

Results

The digital panoramic radiographs of 1280 patients were collected from the Dental Clinics of the National Taiwan University Children's Hospital. The age of the 1280 patients ranged from 2 to 19 years with a mean age of 9.92 years. Among 1280 patients, 144 (11.25%) patients were found to have 179 supernumerary teeth. Thus, the mean number of supernumerary teeth per patient was 1.24. Moreover, 114 patients (94 boys and 20 girls) had one supernumerary tooth, 29 patients (22 boys and 7 girls) had two supernumerary teeth, and the remaining one patient (a boy) had seven supernumerary teeth in the maxillary and mandibular premolar regions (Table 1). The supernumerary teeth occurred more commonly in boys ($n = 117$, 16.48% of 710 boys) than in girls ($n = 27$, 4.74% of 570 girls, $P < 0.0001$) with a male to female ratio of 4.33: 1 (Table 1).

The age of the 144 patients with supernumerary teeth ranged from 3 to 16 years with a mean age of 7.61 years. The supernumerary teeth occurred more frequently in the 5-9-year age group (97/144, 67.36%) (Table 2). Of the 144 patients with supernumerary teeth, 27 (18.75%) were in the primary dentition stage, 94 (65.28%) in the mixed dentition stage, and 23 (15.97%) in the permanent dentition stage.

Of the 179 supernumerary teeth analyzed, the most common location of the supernumerary teeth was the anterior maxillary region (168/179, 93.85%), followed in a descending order by the posterior mandibular region (8/179, 4.47%) and the posterior maxillary region (3/179, 1.68%) (Table 3). Various clinical characteristics of the supernumerary teeth are shown in Fig. 1. Of the 168 supernumerary teeth in the anterior maxillary region, 139 (77.65%) were mesiodentes (Table 3).

The most common shape of the supernumerary tooth was conical (78.77%, 141/179), followed by tuberculate (15.08%, 27/179) and supplemental (6.15%, 11/179). Forty-one (22.91%) supernumerary teeth were erupted and 138 (77.09%) were unerupted (Table 4). Of the 41 erupted supernumerary teeth, 29 (20.57% of 141) were conical-shaped, 10 (37.04% of 27) were tuberculate-shaped, and 2 (18.18% of 11) were supplemental-shaped. Thus, the

Table 1 Distribution of patients with supernumerary teeth by the gender and the number of supernumerary teeth.

	Boys	Girls	Total
Number of patients with one supernumerary tooth	94	20	114
Number of patients with two supernumerary teeth	22	7	29
Number of patients with multiple supernumerary teeth	1	0	1
Total	117	27	144
Number of all patients examined	710	570	1280
Proportion of patients with supernumerary teeth to all patients examined	16.48%	4.74%	11.25%

Table 2 The age distribution of 144 patients with supernumerary teeth.

Age (years)	Number of patients (%)
0–4	17 (11.81)
5–9	97 (67.36)
10–14	26 (18.06)
15–19	4 (2.78)
Total	144 (100.00)

Table 3 Distribution of 179 supernumerary teeth by the region in jaws.

Region	Number of teeth (%)
Maxilla	171 (95.53)
Anterior	168 (93.85)
Mesiodens	139 (77.65)
Posterior	3 (1.68)
Mandible	8 (4.47)
Anterior	0 (0.00)
Posterior	8 (4.47)
Total	179 (100.00)

eruption rate was higher in the tuberculate-shaped supernumerary teeth than in the conical-shaped or supplemental-shaped supernumerary teeth. However, the shape was not significantly correlated with the eruption rate of supernumerary teeth ($P = 0.163$) (Table 4).

Of the 179 supernumerary teeth, 111 (62.01% of 179) were found in the mixed dentition stage, 36 (20.11% of 179) in the primary dentition stage, and 32 (17.88% of 179) in the permanent dentition stage. Of the 41 erupted supernumerary teeth, 13 (36.11% of 36) were discovered in the primary dentition stage, 27 (24.32% of 111) in the mixed dentition stage, and one (3.13% of 32) in the permanent dentition stage. Thus, the eruption rate was higher in the supernumerary teeth in the primary dentition stage and in the mixed dentition stage than in those in the permanent dentition stage. The dentition stage was significantly correlated with the eruption rate of the supernumerary teeth ($P = 0.005$) (Table 4).

In terms of sagittal position, the most common position of supernumerary teeth was the palatal/lingual position (67.60%, 121/179), followed by the position within the arch (25.14%, 45/179) and the buccal/labial position (7.26%, 13/179). Of the 41 erupted supernumerary teeth, 11 (84.62% of 13) were located buccally/labially, 17 (37.78% of 45) within the arch, and 13 (10.74% of 121) palatally/lingually. The eruption rate of the supernumerary teeth was higher in those located buccally/labially or in those located within the arch than in those located palatally/lingually. The sagittal position was significantly correlated with the eruption rate of supernumerary teeth ($P < 0.0001$) (Table 4).

In terms of orientation, the most common orientation of supernumerary teeth was inverted (45.25%, 81/179), followed by the normal orientation (34.64%, 62/179) and the transverse orientation (20.11%, 36/179). Of the 41 erupted

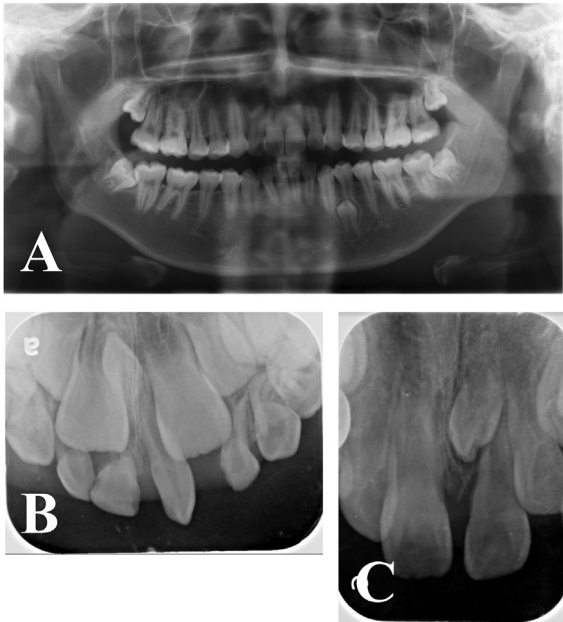


Figure 1 Panoramic and periapical radiographs of the supernumerary teeth in our patients. (A) Panoramic radiograph showing an unerupted supernumerary premolar of the supplemental shape in the left mandibular premolar region of a 15-year-old boy. The supernumerary premolar has a normal orientation and a vertical relation at the level of root apex of the left mandibular first premolar. Moreover, it is at the developmental stage of partial root formation. (B) Periapical radiograph exhibiting two mesiodentes of the conical shape in the anterior maxillary region of a 6-year-old boy. The right unerupted mesiodens has an inverted orientation and a vertical relation at the level of root of the right permanent central incisor. Moreover, it is at the developmental stage of partial root formation. The left erupted mesiodens has a normal orientation and a vertical relation at the level of incisal edge of the left permanent central incisor. Furthermore, it is at the developmental stage of partial root formation. (C) Periapical radiograph demonstrating an unerupted mesiodens of the tuberculate shape in the anterior maxillary region of a 7-year-old boy. The mesiodens has a normal orientation and a vertical relation at the level of root of the left permanent central incisor. In addition, it is at the developmental stage of complete crown formation only.

supernumerary teeth, 40 (64.52% of 62) had the normal orientation, one (2.78% of 36) had the transverse orientation, and none (0% of 81) had the inverted orientation. On the contrary, of 138 unerupted supernumerary teeth, 81 (100% of 81) had the inverted orientation, 35 (97.22% of 36) had the transverse orientation, and 22 (35.48% of 62) had the normal orientation. The orientation was significantly correlated with the erupted rate of supernumerary teeth ($P < 0.0001$) (Table 4).

Furthermore, the distribution of supernumerary teeth by the vertical relation to the adjacent permanent teeth showed that the most common vertical relation to the adjacent permanent teeth was at the level of root (39.11%, 70/179), followed by at the level of root apex (31.28%, 56/179), at the level of crown (18.44%, 33/179), and at the

level of incisal edge (11.17%, 20/179). All supernumerary teeth at the level of root apex (56 teeth) or at the level of root (70 teeth) of an adjacent permanent tooth were unerupted. In contrast, 95% (19/20) of the supernumerary teeth at the level of incisal edge and 66.67% (22/33) of the supernumerary teeth at the level of crown were erupted. The vertical relation to the adjacent permanent teeth was significantly correlated with the eruption rate of supernumerary teeth ($P < 0.0001$) (Table 4).

In terms of developmental stage of the supernumerary teeth, the most common developmental stage was the complete root formation (51.40%, 92/179), followed by the partial root formation (33.52%, 60/179), complete crown formation only (12.29%, 22/179), and the partial crown formation (2.79%, 5/179). All supernumerary teeth with partial crown formation without root formation (5 teeth) were unerupted, while only one supernumerary tooth with complete crown formation without root formation was erupted. Moreover, 28.33% (17/60) of the supernumerary teeth with partial root formation and 25% (23/92) of the supernumerary teeth with complete root formation were erupted. The developmental stage of supernumerary teeth was not significantly correlated with the eruption rate of the supernumerary teeth ($P = 0.075$) (Table 4).

Discussion

Among Taiwanese, the supernumerary teeth are not uncommon. In the early years of poverty in Taiwan, people's supernumerary teeth were usually not treated, and continued to present along with a person's growth. In addition to a long-term impact on a person's appearance and self-confidence, it eventually caused dental caries of itself or the adjacent tooth and toothache problems. Even so, in fact, the statistics of outpatients' dental diseases diagnosed by the dental department of Taiwan Government Taipei Hospital a hundred years ago included the supernumerary teeth, indicating that some of early Taiwanese do have the financial ability to visit the hospital for treatment of the supernumerary teeth.¹¹

In 1995, Taiwan government implemented NHI. The insurance coverage rate is as high as 99.9% so far.^{8,9} In 2006, the dental benefit increased the initial consultation fee for the panoramic radiography, making panoramic radiography a routine examination item that dental patients can obtain in any hospital or dental clinic. In 2020, the dental use rate of NHI in Taiwan's population is as high as 46.98%, which means that approximately 46.98% of Taiwan's population may have the opportunity to receive the panoramic radiographic examination. Furthermore, the children in the 5-9-year age group had the highest dental use rate (80.30%), which indicates that proportionally more children have received the panoramic radiographic examination.⁹ Therefore, we had the opportunity to use panoramic radiographs as the study samples for dental epidemiological investigations of the supernumerary teeth.

This study found that the incidence of supernumerary teeth in the dental patients of the National Taiwan University Children's Hospital was as high as 11.25%, which was much higher than the findings of another study showing an overall prevalence of supernumerary teeth of 2.60%.¹⁰ This

Table 4 Correlations between various parameters and eruption rate of supernumerary teeth.

Parameters	Erupted	Unerupted	Total	Chi-square test
	Number of teeth (%)	Number of teeth (%)	Number of teeth (%)	P-value
Shape				0.163
Conical	29 (20.57)	112 (79.43)	141 (78.77)	
Tuberculate	10 (37.04)	17 (62.96)	27 (15.08)	
Supplemental	2 (18.18)	9 (81.82)	11 (6.15)	
Dentition stage				0.005
Primary	13 (36.11)	23 (63.89)	36 (20.11)	
Mixed	27 (24.32)	84 (75.68)	111 (62.01)	
Permanent	1 (3.13)	31 (96.88)	32 (17.88)	
Sagittal position				<0.0001
Buccal/labial	11 (84.62)	2 (15.38)	13 (7.26)	
Within the arch	17 (37.78)	28 (62.22)	45 (25.14)	
Palatal/lingual	13 (10.74)	108 (89.26)	121 (67.60)	
Orientation				<0.0001
Normal	40 (64.52)	22 (35.48)	62 (34.64)	
Transverse	1 (2.78)	35 (97.22)	36 (20.11)	
Inverted	0 (0.00)	81 (100.00)	81 (45.25)	
Vertical relation to the adjacent permanent teeth				<0.0001
At the level of incisal edge	19 (95.00)	1 (5.00)	20 (11.17)	
At the level of crown	22 (66.67)	11 (33.33)	33 (18.44)	
At the level of root	0 (0.00)	70 (100.00)	70 (39.11)	
At the level of root apex	0 (0.00)	56 (100.00)	56 (31.28)	
Developmental stage of the supernumerary teeth				0.075
Partial crown formation	0 (0.00)	5 (100.00)	5 (2.79)	
Complete crown formation only	1 (4.55)	21 (95.45)	22 (12.29)	
Partial root formation	17 (28.33)	43 (71.67)	60 (33.52)	
Complete root formation	23 (25.00)	69 (75.00)	92 (51.40)	
Total	41 (22.91)	138 (77.09)	179 (100.00)	

does not mean that the prevalence of supernumerary teeth in Taiwanese people is so high, but it shows a fact that in Taiwan, due to the popularization of NHI and panoramic radiographic examinations, the dentists in general community dental clinics have the ability to easily detect the patient's supernumerary teeth that erupt or do not erupt. For the patient's supernumerary teeth, most dentists in community dental clinics usually refer the patient to a large hospital for further examination and treatment. Since the Dental Clinic of the National Taiwan University Children's Hospital is the place where receives the majority of referral patients, it is not surprising to find a high incidence of supernumerary teeth in dental patients in the Dental Clinic of the National Taiwan University Children's Hospital.

Furthermore, for those erupted supernumerary teeth, especially the supernumerary teeth located in the anterior region of the maxilla, the patients themselves or the patients' parents can easily find them. According to Taiwan's medical system, the patients can go directly to large hospitals for dental or medical treatment without going through a referral from a dental or a medical clinic. Therefore, it was not difficult to understand that the incidence of supernumerary teeth in this study was much higher than that in another study.¹⁰ In particular, the

mesiodens in the anterior maxillary region was the most common type of supernumerary tooth in this study, accounting for 77.65% of the 179 supernumerary teeth. Due to the NHI system and the public's medical habits, the incidence of supernumerary teeth in this study cannot be inferred to the entire population of Taiwan. However, we can still perform a randomized study to examine the panoramic radiographs in dental clinics of Taiwan area to infer the prevalence of supernumerary teeth in the entire population of Taiwan in the future. In fact, using panoramic radiographs as a tool for epidemiological investigation of odontogenic or non-odontogenic diseases of the jawbones is indeed a good way to take the advantage of the universal acceptance of panoramic radiographic examinations in the dental clinics.

Among the 1280 children, the incidence of supernumerary teeth was significantly higher in boys (117/710, 16.48%) than in girls (27/570, 4.74%) ($P < 0.0001$). The gender dimorphism is also reported by other authors showing that the male patients are more commonly affected by the supernumerary teeth than the female patients.¹ The samples of this study were obtained from a children's hospital, and the mean age of the patients with supernumerary teeth was 7.61 years, which does not

indicate the predisposing age of having supernumerary teeth is 7.61 years. This is related to the characteristics of odontogenic diseases that once supernumerary teeth are formed in the patient's jawbones, the teeth always exist before they are extracted. Therefore, in this study, the mean age of the patients with supernumerary teeth referred to the mean age of the patients when the supernumerary teeth were found by the X-ray examinations, and could not be interpreted as the mean age of the patients when the supernumerary teeth occurred.

The most common shape of the supernumerary teeth in this study was the conical shape, followed by the tuberculate and supplemental shapes. Supernumerary teeth of the conical and supplemental shapes had nearly similar eruption rates (20.57% and 18.18%, respectively). By comparison, the eruption rate was relatively higher in the supernumerary teeth of the tuberculate shape (37.04%), but there was no significant difference in the eruption rate among the supernumerary teeth of different shapes ($P = 0.163$). In this regard, previous studies also did not reach a consistent conclusion.^{10,12,13}

In this study, the correlation between the eruption rate and sagittal position of the supernumerary teeth showed that most of the erupted supernumerary teeth were predominantly located at a buccal/labial position or minorly located at a sagittal position within the arch. The majority (89.26%) of the 121 supernumerary teeth at a palatal/lingual position and more than half (62.22%) of the 45 supernumerary teeth at a position within the arch did not erupt into the oral cavity.

In this study, 40 (64.52%) of the 62 supernumerary teeth with a normal orientation erupted into the oral cavity. However, the majority of the supernumerary teeth with a transverse orientation (97.22%) or with an inverted orientation (100%) did not erupt into the oral cavity.

Assessments of erupted supernumerary teeth in a vertical relation to the adjacent teeth showed that they tended to erupt to the level of incisal edge (95.00%) or to the level of crown (66.67%) of the adjacent permanent tooth. Unerupted supernumerary teeth typically showed a vertical relation to the adjacent permanent teeth at the level of root (100%, 70/70) or at the level of root apex (100%, 56/56).

Of the 41 erupted supernumerary teeth that the developmental stage was analyzed in this study, 23 had complete crown and root formation, 17 had complete crown formation and partial root formation, and the remaining one had complete crown formation only. Although there was no significant difference in the eruption rate among the supernumerary teeth at different developmental stages of tooth formation, approximately 25–28% of supernumerary teeth erupted at the different developmental stages of root formation. However, 69 (75%) of the 92 supernumerary teeth with complete crown and root formation and 43 (71.67%) of the 60 supernumerary teeth with complete crown formation and partial root formation did not erupt into the oral cavity. Therefore, although the development stage of the supernumerary teeth plays a pivotal role in determining whether they may erupt or not, the final eruption or non-eruption of the supernumerary teeth mainly depends on whether there are obstacles (such as teeth) in the eruption pathway of the supernumerary teeth.

This retrospective study showed that the most common location of supernumerary teeth was the anterior maxillary region. Of the 168 supernumerary teeth located in the anterior maxillary region, 139 (82.74%) were mesiodentes. Moreover, mesiodentes were usually conical-shaped and typically located at the palatal side of the maxillary incisors. The supernumerary teeth in the premolar region were more commonly found in the mandible than in the maxilla and were usually of supplemental type with the morphology very similar to the permanent mandibular premolars.

In this study, most of the erupted supernumerary teeth were significantly found in the primary dentition and mixed dentition stages compared to the permanent dentition stage. This means that the erupted supernumerary teeth can be discovered by the parents at an earlier dentition stage (such as primary or mixed dentition stage). Therefore, the parents took their children directly to the hospital for further examination and treatment, while the other numerous unerupted supernumerary teeth may be detected in a dental clinic and then referred to the hospital for further examination and treatment. Most of the supernumerary teeth (either erupted or unerupted) in children were found in both the primary and mixed dentition stages, which means the implementation of NHI system in Taiwan, the convenience and accessibility of dental resources, and the improvement of public awareness of oral health all contribute to the early and prompt treatment of the supernumerary teeth in children in Taiwan. The supernumerary teeth (such as mesiodentes) in the anterior maxilla can result in malalignment of the maxillary incisors that can be easily detected by the parents. In this situation, the parents may bring their children to a large hospital to seek for further dental treatment. Therefore, the supernumerary teeth of Taiwanese children in the primary and mixed dentition stages have a high chance of early diagnosis and early treatment. Actually, this study showed a relatively low frequency (3.13%) of finding the supernumerary teeth in pediatric patients in the permanent dentition stage. Based on the results of this study, we believe that analysis of the subsequent management of supernumerary teeth in pediatric patients is worthy of further studies.

In addition, analysis of the panoramic radiographs in dental departments of the hospitals at different levels and in different regions of Taiwan can further explore the dental treatment patterns and treatment methods for patients with odontogenic or non-odontogenic jawbone diseases, which are also the directions worthy of future researches.

This study investigated the clinical and morphological characteristics of 179 supernumerary teeth in Taiwanese pediatric patients, and helped us to understand the patients' medical visit patterns for management of these supernumerary teeth. In addition to detection of dental caries, periodontal diseases, and supernumerary teeth, the panoramic radiographs can also be used for the detection and diagnosis of oral and jawbone diseases, such as impacted teeth as well as odontogenic or non-odontogenic cysts and tumors. Therefore, in addition to oral pathology and oral radiology specialists, dental students, general dentists, and various dental specialists should have sufficient training in the interpretation of various dental

radiographs, including panoramic, periapical, occlusal, cephalometric, and CBCT images, so as not to misdiagnose the important diseases or lesions in the oral and maxillo-facial region of the patients.¹⁴

In conclusion, the incidence of supernumerary teeth in 1280 Taiwanese patients (age range 2–19 years, mean age 9.92 years) was 11.25%, and the most frequent location for the supernumerary teeth is the anterior maxilla in this study. Many factors such as shape, sagittal position, orientation, vertical relation to the adjacent teeth, and the developmental stage of the supernumerary teeth must be considered for evaluating the supernumerary teeth. The demographic profiles of the Taiwanese patients with supernumerary teeth in this study can provide useful epidemiological data in the literature.¹⁰

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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