Clinical, radiographic and surgical analysis of supernumerary teeth in non-syndromic patients.

Maikel Hermida, D.D.S., Ph.D., Marco Arturo Moreno, D.D.S., M.Sc., César Germán Angulo, B.S.
Universidad Autónoma de Baja California, Facultad de Odontología Mexicali

INTRODUCTION

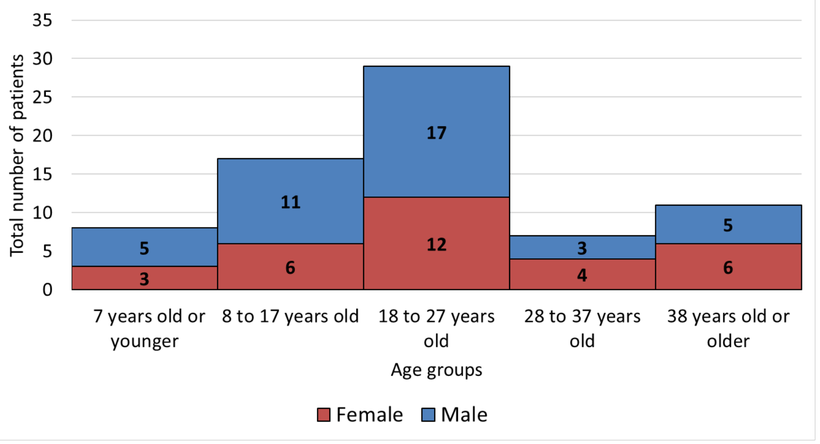
Supernumerary teeth are those that surpass the normal amount of dental organs within their respective dental arch. The etiology is multifactorial, and its diagnosis is based on clinical and radiographic findings with or without symptoms, which define the surgical approach. We conducted a cross-sectional analytical observational study with the aim of determining the association between clinical, radiographic and surgical variables in cases of supernumerary teeth among non-syndromic patients residing in Mexicali, Baja California, Mexico.

METHODS & MATERIAL

A cross-sectional analytical observational study was conducted to determine the association between clinical, radiographic and surgical variables of supernumerary teeth in non-syndromic patients, residents of Mexicali, Baja California, Mexico. A convenience sample of 72 patients who had been diagnosed with supernumerary teeth, and received treatment between January 2018 and June 2023 through the Oral and Maxillofacial Surgery service of the Mexicali's School of Dentistry at the Autonomous University of Baja California, was studied. Oral clinical data, radiographic aspects of position and shape, and surgical conditions of interest for the removal of these teeth were specified, with descriptive measurements and Chi-square test and $p < 0.05$ to measure the association.

RESULTS

Graph 1: Distribution of patients according to age group and sex (n=72).



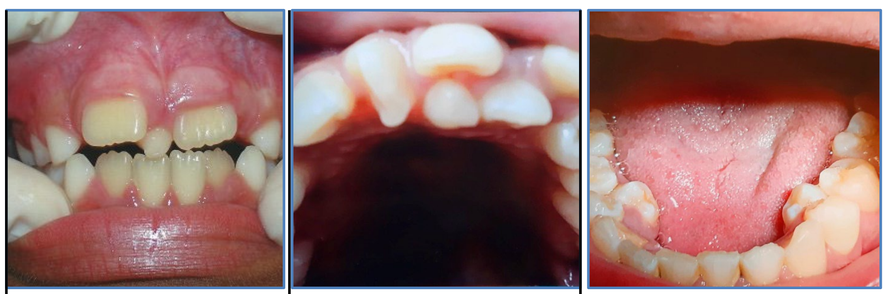
Case report 1: Orthopantomography with supernumerary teeth in a 24-year-old patient.

Source: Mexicali's Dental School Clinical Records

Case report 2: Orthopantomography with supernumerary teeth in a 22-year-old patient.

Source: Mexicali's Dental School Clinical Records

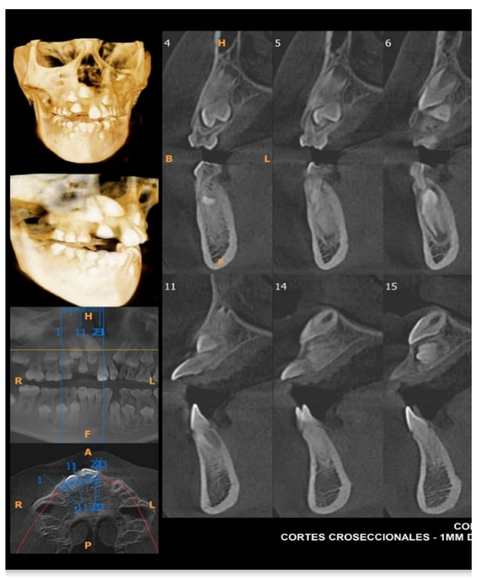
Figure 1: Association between clinical and radiographic parameters.



Malocclusion and rotation of the longitudinal axis of the supernumerary tooth.	Gingival bulging and rotation of the longitudinal axis of the supernumerary tooth.	Visibility of the crown and rotation of the longitudinal axis of the supernumerary tooth
X^2=4.10	**X^2= 4.61**	**X^2= 7.27**
P=0.042	**P= 0.032**	**P= 0.00**
p<0.05	**p<0.05**	**p<0.05**

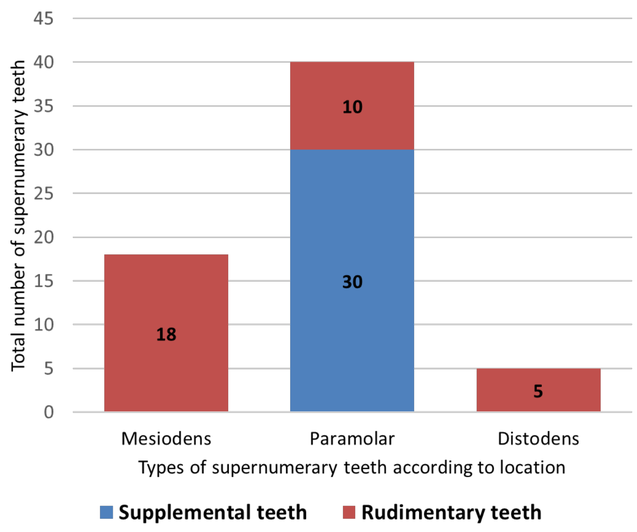
Source: Mexicali's Dental School Clinical Records

Case report 3: Tomography with supernumerary teeth in an 8-year-old patient.



Source: Mexicali's Dental School Clinical Records

Graph 2: Distribution of supernumerary teeth according to location and morphology.



CONCLUSION

Non-syndromic supernumerary teeth predominated in males, aged between 18 to 27 years, and located in the region of the lower premolars and upper midline; therefore, there was a greater frequency of paramolar teeth compared to mesiodens and of supplementary teeth over rudimentary teeth. Rotation of the tooth on its longitudinal axis was the most frequent radiographic variable, followed by displacement of neighboring teeth, so that rotation of the supernumerary tooth was associated with malocclusion, gingival bulging and crown visibility. The complexity of surgical interventions related to supernumerary teeth was associated with: bone coverage, compromising approach to neighboring anatomical structures and proximity to neighboring teeth, mainly at the root level.

REFERENCES

- Kuwada C, Ariji Y, Fukuda M, Kise Y, Fujita H, Katsumata A, Ariji E. Deep learning systems for detecting and classifying the presence of impacted supernumerary teeth in the maxillary incisor region on panoramic radiographs. Oral Sur Oral Med Oral Pathol Oral Radiol. 2020; 130(4), 464-469.
- Finkelstein T, Shapira Y, Pavlidi AM, Schonberger S, Blumer S, Sarne O, Shpack N. Prevalence and characteristics of supernumerary teeth in Israeli orthodontic patients. J Clin Pediatr Dent. 2019; 43(4): 244-251.
- Hupp JR, Ellis E, Tucker MR. Cirugía Oral y Maxilofacial Contemporánea. 7ma ed. Barcelona: Elsevier, 2020.
- Cawson R, Odell E. Cawson's essentials of Oral Pathology and Oral Medicine. 9th ed. Barcelona: Elsevier, 2017.
- Eshgian N, Al-Talib T, Nelson S, Abubakr NH. Prevalence of hyperdontia, hypodontia, and concomitant hypo-hyperdontia. J Dent Sci. 2021; 16(2): 713-717.
- Santana Garay JC. Atlas de patología del complejo bucal. 2da ed. La Habana: Editorial Ciencias Médicas; 2010.

Case report 4: Clinical and radiographic appearance of bilateral supernumerary teeth in a 16-year-old patient.

Source: Mexicali's Dental School Clinical Records

Presented at the 99th Annual Session of the Greater New York Dental Meeting in 2023.