

# Hypodontia and supernumerary teeth in a German cleft lip (with/without) palate population

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## Introduction

Clefts of the lip (with/without) palate (CL/P) are one of the most common craniofacial malformations<sup>2</sup>, occurring with a prevalence of 1:500 births<sup>1</sup>. These malformations are often associated with dental abnormalities including number, shape and location<sup>3,4</sup>. Especially for orthodontists and surgeons, local data on the prevalence of these variations are very interesting and helpful to facilitate treatment planning and set time for intervention<sup>5</sup>.

**The aim of the present study was to evaluate the prevalence and distribution of hypodontia and supernumerary teeth in an exemplary German CL/P population dependent on the type and severity of the cleft.**



**Figure 1:** Exemplary panoramic x-ray of a 10-year-old patient with a CLP on the right side. The right lateral incisor, right second premolar and left second premolar of the upper jaw are missing.

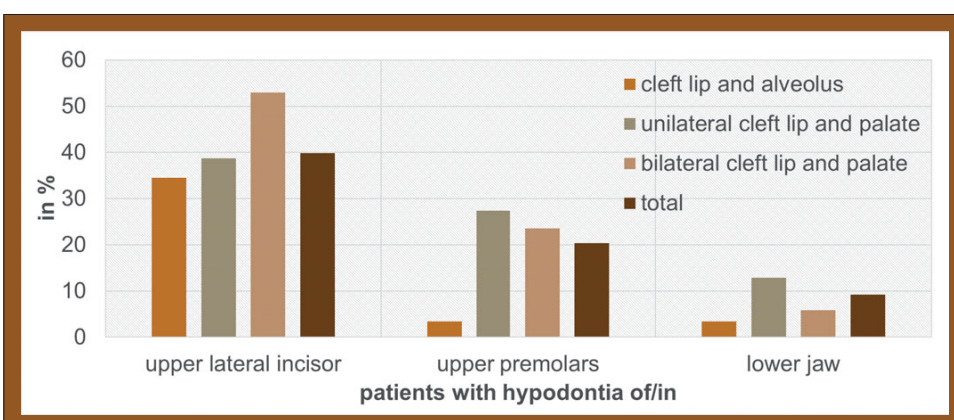
## Results

The analysis included 31 unilateral right-sided clefts, 60 unilateral left-sided clefts, and 17 bilateral cleft malformations. The gender distribution showed a typical ratio of 1.77:1 male to female patients.

In 50% of the patients, at least one tooth was missing. Supernumerary teeth could be found in 33.3% of the patients, whereas right-sided clefts were more frequently affected. On the contrary, hypodontia was more often detected in left-sided and bilateral clefts (Figure 2).

There was a total of 102 missing teeth, of which 86 were found in the upper jaw and 16 in the lower jaw. Upper lateral incisors and upper second premolars were most frequently missing. In total 47 supernumerary teeth could be found, which were exclusively located in the upper jaw. In 5.6% of the cases, missing and supernumerary teeth were recorded in the same individual. Aplasia was more common on the cleft side than on its contralateral side (63.0% vs. 18.5%), as were supernumerary teeth (cleft vs. non-cleft side: 83.8% vs. 13.5%) (Figure 3).

Furthermore, tooth agenesis was significantly dependent on the severity of the cleft. Likewise, the number of patients with at least one missing tooth increased as did the number of missing teeth in correlation with an increase of the severity of the cleft (Figure 4). Upper second premolars as well as teeth of the lower jaw were significantly more often missing, if the extend of the cleft included the region of the secondary palate (Figure 5). Statistically, supernumerary teeth occurred significantly more frequently in patients with an isolated cleft of the lip and the alveolus (Figure 4).



**Figure 5:** Distribution of hypodontia dependent on cleft severity and tooth type.

## Conclusion

**Cleft patients have a significant risk for hypodontia and supernumerary teeth, which are more common on the cleft side. Clear associations with cleft type and severity of the cleft could be detected.**

For references please contact author

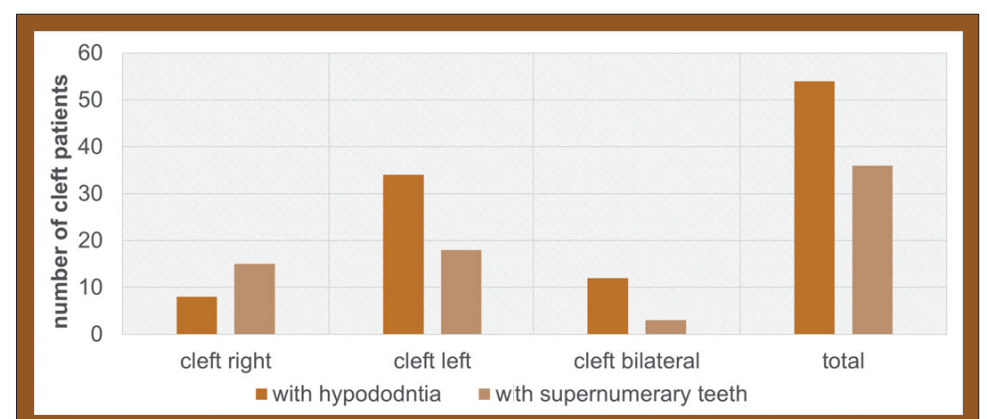
## Material und Methods

Radiographs and dental records of 386 cleft patients who had been treated and followed up in the Department of Oral and Maxillofacial Surgery, University Hospital Carl Gustav Carus Campus, Dresden, Germany (Jan 1994-Nov 2016) were analysed retrospectively (Figure 1).

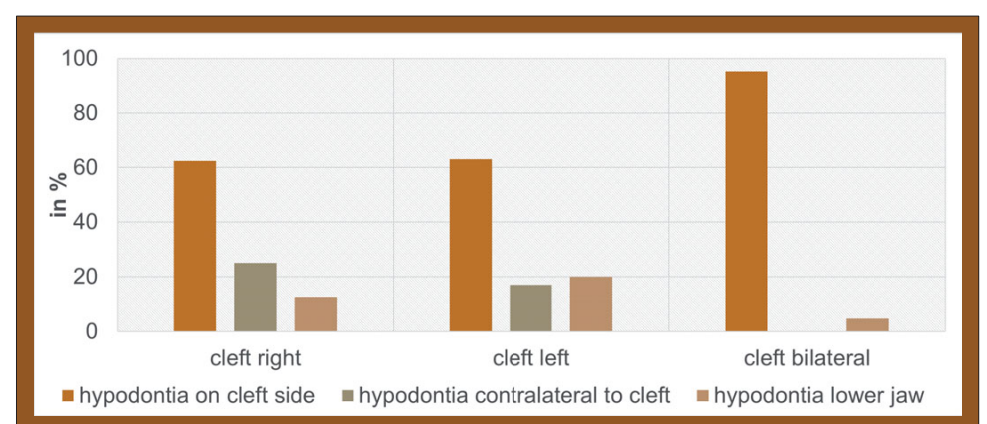
108 met the inclusion criteria:

- non-syndromic cleft lip and alveolus (CLA) or cleft lip and palate (CLP) patient
- at least one clear panoramic x-ray
- sufficient dental records

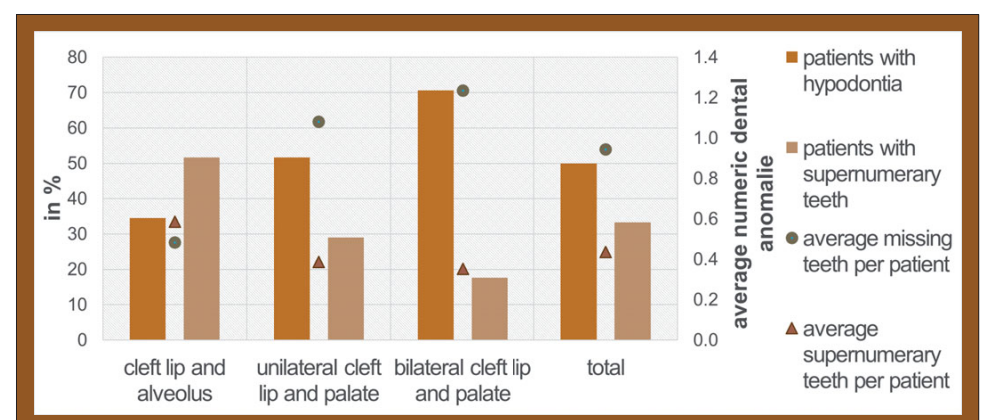
Statistical analyses were performed concerning the degree of numeric abnormalities dependent on gender, prevalence, localisation of the abnormality, type and severity of the cleft using x-square and binomial tests ( $p \leq 0.05$ ).



**Figure 2:** Distribution of hypodontia/ supernumerary teeth dependent on cleft type, in reference to the analysed cleft patients.



**Figure 3:** Localisation of hypodontia dependent on the cleft type.



**Figure 4:** Cleft patients with hypodontia/ supernumerary teeth and average missing teeth per patient dependent on the severity of the cleft.