Mild hypodontia is associated with reduced tooth dimensions and cusp numbers compared to controls in a Romanian sample

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Objectives

- The associations seen clinically between variations in tooth number, size and shape reflect the repetitive genetic interactions occurring between the epithelium and mesenchyme during the initiation and morphogenetic stages of dental development. The aim of this study was to investigate this relationship further by comparing multiple crown parameters, including cusp numbers, between patients with mild hypodontia and controls.

Methods

- Digital images of dental casts of the permanent dentition from 28 Romanian subjects with mild hypodontia and 28 controls were used. Measurements of the vestibular and occlusal surfaces were performed using a 2D image analysis method (Fig.1).
- Cusps were counted and seven dimensions were measured (Fig.2, 3): mesio-distal (MD), occluso-gingival (OG), bucco-lingual (BL), vestibular perimeter, vestibular area, occlusal perimeter and occlusal area.
- Multivariate analysis of variance was performed using SPSS V17 software.

Results

- Age and gender distribution in both groups:
  - between 13 and 29 years; 16 female and 12 male
- Teeth in the hypodontia group were smaller than those of controls, with many measurements being significantly different (Table I).

Conclusions

- This study demonstrated differences in multiple parameters of crown size and shape in patients with mild hypodontia compared to controls. The degree of these differences varied between different tooth types and dimensions.

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