

#### OP34 PREMOLAR AUTOTRANSPLANTATION IN ORTHODONTIC TREATMENT

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**AIM:** To present the long-term evaluation of survival and failures of autotransplanted premolars, followed more than 30 years.

**SUBJECTS AND METHOD:** One hundred consecutive patients treated with autotransplantation caused by tooth loss, hypodontia and ectopic tooth position. All patients (9.2-14.4 years, mean 12.8 years, 53 boys, 47 girls), had one-rooted premolar transplanted from one region to another or *in situ*. In total 118 premolars were transplanted in root stages with an open apex wider than 1 mm. Primary healing and follow-up were tested using a Siemens electrometric pulp tester to detect pulpal reinnervation and standardized radiographs to test transplant healing and root development generally. Assessments were carried out at 1, 4, 8, 12 and 24 weeks and thereafter yearly after transplantation. Tooth eruption and root development was evaluated using a colour coding technique (developed at the Karolinska Institute, Stockholm). Transplants were moved or rotated orthodontically 3-9 months after transplantation.

**RESULTS:** Complicated problems were moved to other regions or replaced, which made them easier to solve orthodontically. Most transplanted premolars showed normal tooth eruption, compared with contralaterals. Transplants induced tooth eruption and bone induction. Transplants erupted before visible root formation and before visible alveolar bone formation. Furthermore, marginal gingiva was transferred with both papillae. A survival rate of 91.5 per cent and a failure rate of 8.5 per cent was found for all transplants. Premolars transplanted as maxillary incisors had a higher incidence of failure (15%) than premolars transplanted to the mandibular premolar regions (7.6%).

**CONCLUSIONS:** The method is therefore essential in orthodontic treatment planning.