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Bio Introduction

- Associate Professor - Rutgers School of Dental Medicine (RSDM) - Department of Orthodontics, Newark, NJ;
- President - Society of Orthodontic Educators (SOE);
- Serving as ABO examiner since 2010;
- Reviewer for the AJODO, EJO, JWFO, and Angle Orthodontist.
AAO Donated Orthodontic Services (DOS) Program

All that is missing is You!

- Introduced in 2009, the DOS program provides access to care for children in need. Access to quality orthodontic care is missing in many children’s lives. The AAO DOS program mission is to serve indigent children without insurance coverage or that do not qualify for other assistance in their state of residence.
- The program has expanded and offers care to children nationwide in addition to the recognized state programs in Illinois, Indiana, Kansas, Michigan, New Jersey, North Carolina, Rhode Island, Tennessee, Texas and Virginia.
- In order to expand further, we need you to help us by volunteering to serve as a provider orthodontist or help identify orthodontists willing to lead efforts to establish a DOS chapter in your state.
- Stop by the DOS booth here in San Diego to learn more about the program or contact Ann Sebaugh at asebaugh@aaortho.org with questions.
Treatment of patients missing maxillary lateral incisors and its anchorage requirements

Three Presentation Goals

1. Recognize the incidence/prevalence of missing maxillary lateral incisors.
2. Correlate the significance of congenitally missing lateral incisors to the whole dentition.
3. Assess ideal anchorage requirements for treating patients missing maxillary lateral incisors.
The frequency hypodontia (212 ortho children) was 11.3%. Most often missing teeth – Rt. side (54%) – Lt. side (46%). 1 tooth absent - 29%; 2 teeth - 58.5%; seldom 3 teeth missing.

- Panoramic radiographic of 2,546 Slovenians.
- Overall prevalence was 6.9% (excluding 3rd molars).
- Mand. 2nd premolar (38.8%), Max. lateral incisors (32.6%).
- 86.9% of pts. were missing only one or two teeth.
Multiple treatment options:

1. single-tooth implants;
2. canine substitution;
3. tooth-supported restorations;
4. Maintenance of primary teeth.
1. Single tooth implant

- **Main benefit**: leaves the adjacent teeth untouched.
- The thickness of the alveolus must be adequate to allow for proper implant placement.
The implants should be placed only after growth is complete. The timing for implant placement after the end of growth is:

• 20 to 21 years of age for men;
• 16 to 17 years of age for girls.

Orthodontic aspects of the use of oral implants in adolescents: a 10-year follow-up study
Birgit Thilander, Jan Ödman, Ulf Lekholm - EJO – 23 (2001), 715-731

15 year old boy – at implant placement

3 year old control. 1.6 mm of infraocclusion
18 cm increase in body height

25 year old adult – 2.2 mm of infraocclusion
1. Single tooth implant

1. Single tooth implant


8 years and 3 months retention photos
Temporary replacement of missing maxillary lateral incisors with orthodontic miniscrew implants in growing patients: rationale, clinical technique, and long-term results. Cope JB¹, McFadden D².

Bone level after 99 months was adequate.
1. Single tooth implant


Implant Surface Area (SA)
= cylinder \(2\pi rh\)
= (2) \((\pi)\) (r) (h)
= (2) (3.14) (1.75) (10.0)
= 109.9 mm²

Percent Increase in Surface Area (SA)
= Implant SA - MSI SA / MSI SA x 100
= 109.9 - 45.2 / 45.2 x 100
= 1.42477 x 100
= 142.5 %

It is highly unlikely that a smooth surfaced, machine-polished MSI will osseointegrate.
2. Canine Substitution

Advantages

- for **young** patients: the permanence of the finished result and the possibility to **complete** overall treatment in early adolescence, after the orthodontic intervention.

- long-term adaptations of the teeth and supporting structures will appear natural.
2. Canine Substitution

Disadvantages

- Conic shape of the canine may require significant reshaping on buccal and/or lingual surfaces.
- Color and texture of canine may be difficult to match the central incisor.
- Gingival contour may present discrepancies.
- Difficulties in matching the contralateral lateral incisor, if present.
3. Tooth supported restoration

The 3 types of tooth supported restorations:
1. Resin bonded fixed partial denture (FPD) – “Maryland bridge”;
2. Cantilevered fixed partial denture;
3. Conventional full-coverage FPD.

The treatment of choice should be the least invasive option that satisfies the expected esthetic and functional objectives.
4. Maintenance of primary tooth

- Canines may remain until older age without resorbing.
- Spare canine from canine guidance
PURPOSE:
To determine if a tooth size discrepancy exists in orthodontic patients with agenesis of one or both maxillary lateral incisor(s).
New Evidences


**Material and Methods:**

- 40 dental casts - white ortho. pts. missing one/both Max. Lat. Inc. –Milwaukee, WI orthodontists.
- 40 dental cast match for sex, gender and race. - MUSoD
New Evidences


Material and Methods:

• All maxillary and mandibular teeth measured using digital caliper
• No reported interproximal enamel reduction during treatment.
The control group has larger tooth size than the test group.
Conclusions


• Patients with unilateral or bilateral agenesis of the maxillary lateral incisor have smaller than average teeth when compared to a control-matched group.

• If these patients have smaller teeth, then they may require a smaller than the necessary 6.5 mm or 7 mm space for an implant/restoration tooth replacement.
Analysis of crown widths in subjects with congenitally missing maxillary lateral incisors

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SUMMARY The aim of the study was to test the hypothesis that the gene defect causing congenital absence of maxillary lateral incisors also causes narrowing of the dentition. A total of 81 patients with one or two congenitally missing lateral incisors were retrieved; 52 (64.2 per cent) patients presented bilateral agenesis, whereas 29 (35.8 per cent) had unilateral agenesis. The control group consisted of 90 consecutively treated patients. The largest mesiodistal crown dimension for all teeth, except for the maxillary second and third molars, was measured on plaster casts using a digital caliper to the nearest 10th of a millimetre. Statistical testing was performed using the analysis of variance model (P < 0.05) to test for differences in the mesiodistal dimension between the sample and the control group. Significance has been assessed using a P-value threshold level of 5 per cent. Agenesis of maxillary lateral incisors was found to be a significant predictor of tooth size. Patients who were missing maxillary lateral incisors had smaller teeth compared to control subjects, except for the maxillary right and left first molars. This finding was true for both unilateral and bilateral lateral incisor agenesis. Interaction between maxillary lateral incisor agenesis and gender was not significant. Patients with congenitally missing lateral incisors have narrower teeth than patients without any dental anomalies, except for maxillary first molars. A higher prevalence of microdontic contralateral incisors was found in patients with unilateral agenesis with respect to the control group.
Conclusions

1. Prevalence/frequency of missing maxillary lateral incisors is about 1/3 of all hypodontia cases.

2. If one of both lateral incisors are missing, the size of other teeth will be smaller too.

3. Treatment result is **ALWAYS** compromised.

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