

IN BRIEF

- Orthodontists work in two distinct practice organisations: one with limited access to a restorative opinion and one with ready access to restorative opinions.
- The type of practice environment influences the type of treatment offered.
- Orthodontists working with limited or no access to restorative dentists evaluate the space for implants from the inter-crown distance.
- Orthodontists who work regularly with restorative colleagues evaluate the distance between the roots of adjacent teeth from an intra-oral radiograph.
- Orthodontists who work in isolation are recommended to evaluate the space for implants and hence the need for orthodontics from intra-oral radiographs.
- There is a need to promote clearer guidelines and protocols for practitioners involved in the management of hypodontia.

Developmentally absent maxillary lateral incisors

The management of developmentally absent maxillary lateral incisors – a survey of orthodontists in the UK
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ABSTRACT

Objective

To investigate the orthodontic management of patients with developmentally absent maxillary lateral incisors.

Materials and methods

A questionnaire was mailed to all orthodontists on the specialist list held by the British Orthodontic Society.

Results

The questionnaires (57.3% response) were analysed in two groups: Group 1 consisted of orthodontists who worked only in an orthodontic practice environment; Group 2 consisted of orthodontists who worked full-time or part-time in an environment where there were restorative dentists available for advice. Group 1 orthodontists were significantly more likely to recommend ($p = 0.006$) space closure in the management of developmentally absent maxillary lateral incisors. Group 2 orthodontists were significantly more likely to recommend ($p = 0.004$) minimal preparation bridges. Group 2 orthodontists also saw significantly more patients with hypodontia ($p \leq 0.001$) and were significantly more likely to routinely obtain a restorative dentistry opinion before orthodontic treatment commenced ($p = 0.001$). Group 1 orthodontists were significantly more likely to assess the space required for implants by measurement between the crowns of adjacent teeth ($p = 0.001$). Group 2 orthodontists were significantly more likely to assess the space by use of intraoral radiographs ($p = 0.019$) or by measurement between teeth at the gingival margin ($p = 0.029$).

Conclusions

The management of developmentally absent maxillary lateral incisors by orthodontists in the UK appeared to be influenced by their practice environment, their experience and the availability of restorative dentistry advice. The influence of these factors was greater for the treatment options of space closure or replacement via resin-retained bridges but less so for implant treatment. This reinforces the need for multidisciplinary involvement.

EDITOR'S SUMMARY

I have to admit that, as an undergraduate I was fascinated by the fact that developmentally absent teeth were more frequently the 'last in the line' at the end of the process in which the tooth bud had in fact failed to bud; the lateral incisors, second premolars and third molars. It was one of those revelations that has always stayed with me.

However, while such a biological observation might be an intellectual curiosity, it is in the real world a matter of considerable inconvenience, not least of which aesthetically. The authors of this study quote a prevalence in the UK of missing maxillary lateral incisors as 2%, which hardly seems like a huge problem. On reflection and at a very rough guess, this represents some half a million people and if they all had these teeth bilaterally missing we would be talking about a million absent anterior teeth. Put into this perspective, the problem becomes rather less of a minority consideration. A million spaces to close or to open; that is the question.

This study has uncovered an interesting dichotomy in these two main treatment options but based not as directly on need so much as style of practice and available collaborative services. As a primary observation it is salutary that the treatment plan devised in such cases has less to do with best outcome than with convenience, or at least pragmatism, of process.

Dentistry as a team pursuit is a theme ever on our minds nowadays but the team has a wider meaning in this context in that it provides a greater number of potentially beneficial options for the patient than the solo practitioner, even as a specialist can provide. More to ponder in terms of education, management, organisation and cooperation – a simple observation made manifest.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 203 issue 11.

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FULL PAPER DETAILS

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AUTHOR QUESTIONS AND ANSWERS

1. Why did you undertake this research?

We undertook the research to assess the understanding of treatment options and space requirements for orthodontic specialists. We estimated that one in three patients seen at an implant referral clinic had insufficient space to allow implant replacement of missing lateral incisors following orthodontic space creation. There is a significant change in the types of referrals that are seen in tertiary referral centres, with increasing numbers of patients presenting with more complex multi-disciplinary clinical scenarios. Frustrations for patients and practitioners occur when protracted orthodontic care needs to be further extended because, despite the crowns of the teeth looking prepared for implant placement, the roots are not. By establishing the current understanding of practitioners who deliver the orthodontic care for patients with developmentally absent teeth, identifying any deficiencies in this knowledge and then supporting them, we could help improve the quality of patient care.

2. What would you like to do next in this area to follow on from this work?

There are two main areas of research that could follow this study. The first is to explore the main reasons why clinicians recommend specific treatment options – are they based mainly on past experience, financial/cost effectiveness reasons, availability of treatment within their region or superiority of one treatment? Unfortunately there are no randomised controlled clinical trials comparing the treatment options to provide evidence for the last point. The second area of research would involve providing more education for the orthodontic practitioner and measuring the impact of this on the decision making process. The education could be provided by:

- (i) a downloadable PowerPoint presentation of a few cases to be included within education courses
- (ii) a simple distance learning module from one of the professional organisation websites.

COMMENT

Developmental absence of the maxillary lateral incisor affects approximately 2% of the population¹ and can often mean complex treatment planning decisions in the adolescent patient. There are essentially two options: either to reopen the space for a prosthetic replacement or to close space, replacing the lateral incisor with the adjacent canine, a decision that depends on many factors. Prosthetic replacement of a missing lateral incisor commits the patient to long term restorative care which can impose a significant treatment and financial burden. Space closure on the other hand may negate the need for restorative care totally or reduce it considerably.

This study reports the results of a postal survey of specialist orthodontists. It found that the orthodontists who worked closely with a restorative dentist were significantly less likely to recommend space closure than those who did not. The study highlights the fact that those working closely in multi-disciplinary teams sought advice more frequently and were more likely to do this prior to a definitive plan being decided upon, which is obviously optimal. The authors felt this difference may reflect on the training each group received, although any difference was not reported. The difference in experience between the groups was statistically significant at just over three years, but even in orthodontic practice it is doubtful if this would be long enough to account for a significant change in treatment philosophy!

What is not explored is the reason behind the differences in the decision making between the groups and this warrants further investigation. Also the patient's opinion regarding different treatment options needs to be explored, not only the quality of the aesthetic result but also the long-term treatment burden. Interdisciplinary working is extremely important to not only ensure that the best treatment option taken, but also that the patient is adequately informed as to their long term commitment. Where treatment planning decisions can have such a significant long term impact, patients deserve the input of the whole team.

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1. Brook A H. Dental anomalies of number, form and size: their prevalence in British schoolchildren. *J Int Assoc Dent Child* 1974; 5: 37-53.