

OP26 DO CONTEMPORARY TREATMENT TECHNIQUES CHANGE THE NEED FOR EXTRACTION IN THE 21ST CENTURY? DATA FROM THE UNIVERSITY OF NORTH CAROLINA

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AIM: The extraction of permanent teeth has long been a key strategy to manage the boundaries of the alveolar envelope of tooth movement. Have contemporary treatment techniques (e.g. self-ligating brackets, skeletal anchorage devices) changed the need for extraction? The aims of this study were to use an epidemiologic approach to 1) report contemporary orthodontic extraction frequencies at a university centre and 2) investigate what technique-related factors might influence the likelihood of extraction.

MATERIALS AND METHOD: The records of 2,995 consecutive patients treated at the University of North Carolina from 2000-2013 were analyzed. Year by year rates for overall orthodontic extractions and for extraction rate by pattern of teeth extracted were calculated. Logistic regression, adjusting for all recorded patient risk factors for extraction (e.g. Angle Class, crowding), as well as all technique-related factors (e.g. growth modification), was used to examine both the changes in extraction frequencies over time and the influence of technique-related factors on the odds of extraction.

RESULTS: Over the time period investigated, the overall extraction rate remained nearly level, just below 25 per cent. When controlling for changes in patient characteristics from year to year, this rate did not vary in a statistically significant way (OR 0.97; 95% CI 0.94, 1.00). When controlling for patient-related diagnostic characteristics that might influence the decision to extract teeth, there was a statistically significant increase in the odds of extraction when temporary anchorage devices (TADs) were used (OR = 2.45; 95%CI 1.07, 5.60), but not with other treatment techniques such as surgical-orthodontics or maxillary expansion. Consistent with previous findings, diagnostic factors such as crowding (OR = 1.20), overjet (OR = 1.07), overbite (OR = 0.87), Angle classification (OR = 1.51), incisor position (OR = 1.53), and lip incompetence (OR = 1.41) had statistically significant effects on the odds of extraction.

CONCLUSIONS: In a university centre, overall extraction rates remained level from 2000-2013, near 25 per cent. When controlling for variations in patient-related factors, the odds of extraction increased with the use of TADs, but not with the use of other treatment techniques. In contemporary orthodontic practice, patient-related diagnostic factors, rather than treatment techniques, are more likely to affect the need for extraction.