

### OP31 EFFECT OF PIEZOCISION ON ROOT RESORPTION

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**AIMS:** To investigate the effect of piezocision on root resorption and root damage when used to accelerate orthodontic tooth movement.

**SUBJECTS AND METHOD:** Fourteen patients were included in this split mouth study; one side was assigned to 'piezocision', while the other side served as the 'control'. Vertical corticotomy cuts of 4-5mm in length were performed on either side of the piezocision premolar. Buccal tipping forces of 150 g were applied to the premolars. After 4 weeks the maxillary first premolars were extracted and scanned with microcomputed tomography.

**RESULTS:** There was significantly more total amount of root resorption seen on the piezocision sides when compared to the control sides ( $P = 0.029$ ). The piezocision procedure resulted in a 44 per cent average increase in root resorption. In five patients there was noticeable piezocision related iatrogenic root damage. When combined with the orthodontic root resorption found on the piezocision treated teeth, there was a statistically significant 110 per cent average increase in volumetric root loss when compared to the control side ( $P = 0.005$ ).

**CONCLUSION:** Piezocision results in a statistically significant increase in the amount of root resorption in comparison to controls after the application of a buccally directed tipping force to maxillary first premolars for four weeks. There is a risk of iatrogenic root damage when performing corticotomy procedures such as piezocision.