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STABILITY OF RAPID VERSUS SLOW MAXILLARY EXPANSION IN PATIENTS WITH POSTERIOR CROSSBITE

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Purpose: To evaluate the stability of rapid (RME) versus slow maxillary expansion (SME) through a systematic review and meta-analysis.

Methods: An electronic search of seven databases was performed. The inclusion criteria consisted of controlled clinical trials which assessed maxillary expansion outcomes soon after expansion and after at least 6 months of follow-up. Outcomes were clustered into: short-term follow-up (0.5 to 1 year), and long-term follow-up (1.5 to 3 years and 3.5 to 11 years). Study selection, risk of bias assessment and data extraction were performed in duplicate.

Results: Twenty-five reports of low to moderate methodologic quality met the final eligibility criteria, including 4 randomized clinical trials. The two studies that were eligible for a meta-analysis showed significant dentoalveolar relapse 3 years post-rapid-expansion. A RME intermolar width relapse of 4.7% (0.32mm) was found for a typical 7mm screw activation. Higher intermolar relapse of 21%-33% (1.1mm to 1.7mm) was reported in the SME (Quad-helix appliance) group, while no statistically significant relapse was reported in the SME (Removable plate appliance) group after a mean of 2-5mm intermolar width increase.

Conclusions: Current limited evidence suggests that SME (Removable plate) produced less relapse but also less intermolar width increase in younger patients compared to RME. Limited evidence also suggests the tendency for SME (Quad-helix) expansion to produce greater intermolar relapse than both SME (Removable plate) and RME (Hyrax/ Haas).

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(* Presenter)