

STALIF C[®]

BIOMECHANICAL STUDY

STUDY

OBJECTIVE

► Compare the non-destructive multi-segmental flexibility properties of the **STALIF C[®]** device versus conventional methods of anterior cervical arthrodesis.

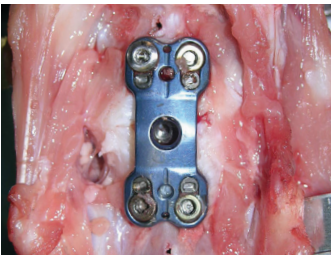
MATERIALS

& METHODS

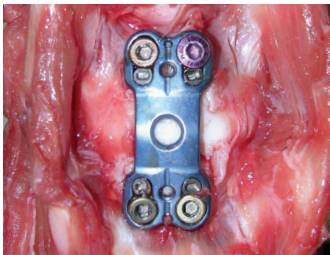
Calf cervical spines (n=7/group) were randomized into multiple groups based on reconstruction (n=7 per group), including:



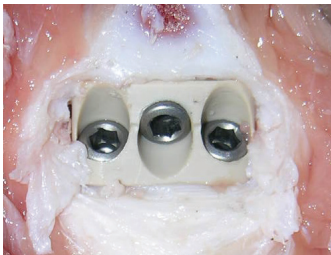
A. ALLOGRAFT ALONE



B. CAGE + ANTERIOR PLATE



C. ALLOGRAFT + ANTERIOR PLATE



D. STALIF C[®]

Biomechanical testing was performed using a six degree-of-freedom spine simulator. To determine the multidirectional flexibility, six non-destructive pure moments were applied under axial rotation (Y-axis, + 4Nm), flexion/extension (X-axis, + 4Nm) and lateral bending (Z-axis, + 4Nm) loading modes.

CONCLUSION

“Most encouraging from these results is that anterior reconstruction alone using the zero profile **STALIF C[®]** three screw device can reduce segmental motion to levels similar to that produced using conventional interbody arthrodesis augmented with anterior cervical plate fixation.” ¹

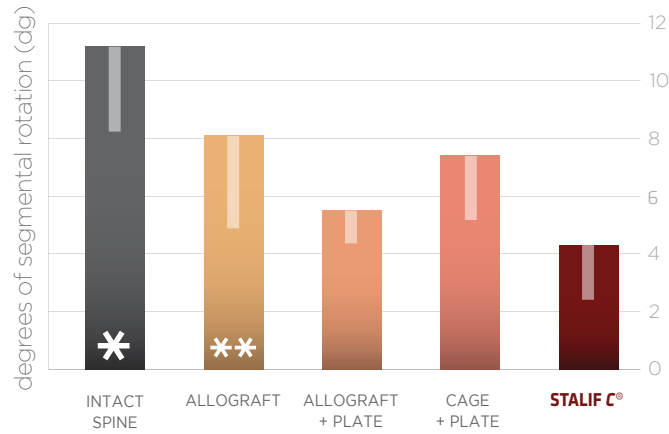
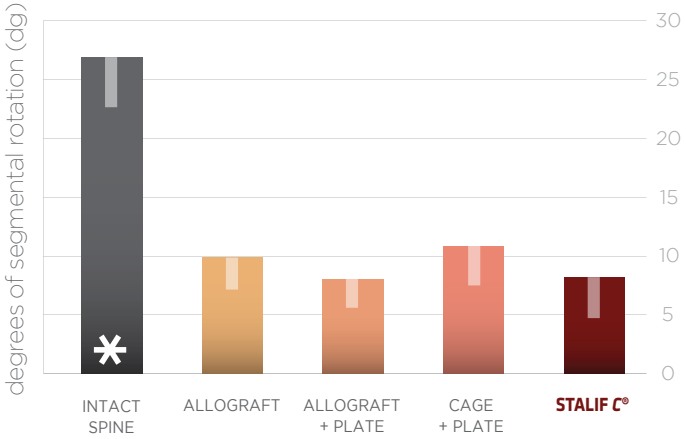
¹ Cappuccino A, MD; Cunningham BW - Multi-directional flexibility properties of the **STALIF C[®]** versus conventional methods of interbody cervical arthrodesis: an in-vitro calf spine model - Nov. 2007.

THE

DETAILS

LATERAL BENDING

Lateral bending testing demonstrated the most significant findings based on flexibility testing of the various constructs. The intact spine, as expected, produced significantly more motion at the operative C4-C5 level compared to all other treatments (p<0.05). No other differences were noted between any other reconstructions (p>0.05) (One Way ANOVA: F=22.83, p=0.000).

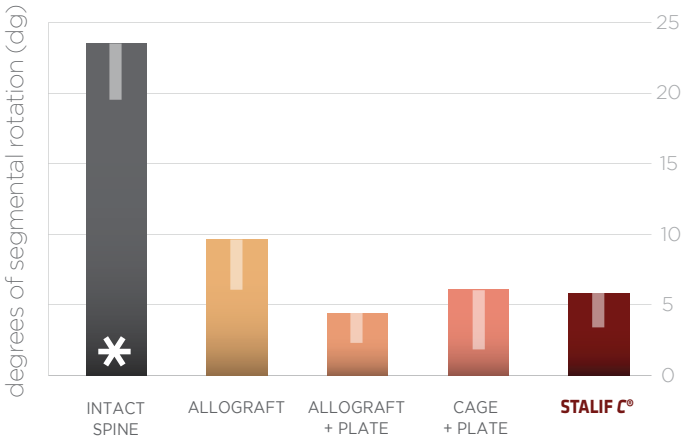


AXIAL ROTATION

Axial rotation testing demonstrated, as expected, the intact cervical spine as producing significantly more motion at the operative C4-C5 level compared to all other treatments (p<0.05). The stand alone allograft bone dowel, although having an excellent fit within the operative level, exhibited significantly more motion than the **STALIF C[®]**. No other differences were noted between any other reconstructions (p>0.05) (One Way ANOVA: F=9.06, p=0.000).

FLEXION-EXTENSION

Flexion-extension highlighted the least significant biomechanical findings in the current study. The intact cervical spine produced significantly more motion at the operative C4-C5 level compared to all other treatments (p<0.05). No other differences were noted between any other reconstructions (p>0.05) (One Way ANOVA: F=24.14, p=0.000).



* Indicates difference from all other treatments at p<0.05.
** Indicates difference from **STALIF C[®]** three screw groups at p<0.05.
Error bars represent one standard deviation and significance is indicated at p<0.05.