Paper #4

The Use of Halo Gravity Traction in the Treatment of Severe Early Onset Scoliosis

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WITHDRAWN

Paper #5

The role of Halo Gravity Traction Prior to MCGR, When Does Correction Occur?

Michelle Welborn, Daniel Bouton, Joseph Ivan Krajbich

Summary: Large stiff curves achieve comparable correction to flexible curves using preop HGT. The HGT patients had better maintenance of curve correction at over 2 year f/u indicating its effects may persist the long term effects of HGT.

Hypothesis: HGT results in improved initial correction and subsequent maintenance of correction in patients with large stiff curves.

Introduction: Treatment of severe scoliosis with HGT prior to MCGR has not been previously reported. Complication rates range from 0-100%. With an ave 44% initial correction of the major curve reported in the literature. Loss of correction and diminishing returns are the norm.

Methods: IRB approved retrospective single site cohort study of a prospective database. 42 patients underwent MCGR between 2014-17, 12 with prior growing constructs were excluded, 30 patients were included, 12 patients underwent preop HGT.

Results: HGT group major curve averaged 90o (69-114o) vs 77o (56-113o) in the non HGT group p= 0.018. Preop bending films accounted for 72% of the total correction achieved in the non-HGT group vs 27% in the non-HGT group. An additional 45% of the total correction was achieved in traction. Comparable correction occurred intratop. See table 1. At most recent follow-up the HGT group maintained their correction better than the nonHGT group p=0.019 gaining 2 o of correction vs a 6 o loss of in the nonHGT group. Ave follow-up was 878vs 804 days in the HGT vs nonHGT groups.

Conclusion: Large, rigid curves can achieve equivalent correction to flexible curves with HGT. 43% of the total correction achieved occurred in traction. 30% of the total correction occurred intraoperatively in the HGT group vs 28% in the non-HGT group. At most recent follow-up HGT patients had maintained their major curve correction better than the non-HGT while the numbers are small they are significant because you would expect them to do worse. Indicating that HGT continues to effect the patient positively long past the initial implantation.

	Preop Cobb	Preop Flexibility	Post traction Cobb	Postop Cobb	Change in Cobb postop vs most recent	Average Follow-up (days)
Traction n=12	90° → 27%	78° → 43%	59°	46°	-2° (-13-9)	878
		70%	30%			
Non traction n=18	77°	46°	NA	34°	6° (-5–17)	804
	72%			28%		
P-value	0.027	0.000	NA	0.421	0.019	

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Paper #6

Sagittal Balance in Hyperkyphotic Patients with Growing Rods and the Effect of Preoperative Halo Gravity Traction

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Summary: Hyperkyphosis is a known risk factor for proximal junctional kyphosis (PJK) in growing rods patients. We found that very hyperkyphotic patients who received preop halo gravity traction (HGT) did not have a significantly higher rate of PJK, indicating that pre-op HGT can mitigate some of the risk of hyperkyphosis.

Hypothesis: Risk factors for PJK in hyperkyphotic growing rods patients are similar to non-hyperkyphotics. Halo gravity traction has protective effect.

Introduction: Hyperkyphosis is a major risk factor for proximal junctional kyphosis (PJK) in patients treated for early onset scoliosis (EOS) with