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TITLE: Prospective, Multi-Center Assessment of Nonoperative Treatment Outcomes and Conversion to Operative Treatment for Adult Spinal Deformity: Minimum 2-Year Follow-Up

AUTHORS (LAST NAME, FIRST NAME): Smith, Justin S.[1]; Shaffrey, Christopher I.[1]; Lafage, Virginie[2]; Schwab, Frank J.[2]; Protopsaltis, Themistocles S.[2]; Klineberg, Eric[3]; Gupta, Munish C.[3]; Fu, Kai-Ming[4]; Hostin, Richard[5]; Deviren, Vedat[6]; Hart, Robert A.[7]; Burton, Douglas C.[8]; Bess, Shay [9]; Ames, Christopher P.[10]; Study Group, International Spine[11]

INSTITUTIONS (ALL): 1. Neurosurgery, University of Virginia Medical Center, Charlottesville, VA, United States.
2. Orthopaedic Surgery, NYU Hospital for Joint Diseases, New York, NY, United States.
3. Orthopaedic Surgery, University of California Davis, Sacramento, CA, United States.
4. Neurosurgery, Weill Cornell Medical College, New York, NY, United States.
5. Orthopaedic Surgery, Baylor Scoliosis Center, Plano, TX, United States.
6. Orthopaedic Surgery, University of California San Francisco, San Francisco, CA, United States.
7. Orthopaedic Surgery, Oregon Health and Sciences University, Portland, OR, United States.
8. Orthopaedic Surgery, University of Kansas Medical Center, Kansas City, KS, United States.
9. Orthopaedic Surgery, Rocky Mountain Hospital for Children, Denver, CO, United States.
10. Neurosurgery, University of California San Francisco, San Francisco, CA, United States.
11. ISSGF, Littleton, CO, United States.

ABSTRACT BODY:

Summary (80 words max): Of 225 adult spinal deformity (ASD) patients who elected for nonoperative (nonop) treatment, 19% converted to surgery at minimum 2-yr follow-up. Those who converted to surgery had greater baseline sagittal spinopelvic deformity and poorer HRQL scores. Surprisingly, appearance was a driver of operative (op) conversion. These data suggest that nonop care at best maintains pain and disability levels and patients with greater pain and disability tend to convert to op care.

Introduction: First-line treatment for ASD is typically nonop. Our objective was to assess outcomes of nonop care for ASD and compare those who converted to op vs those who remained nonop.

Methods: This is a multicenter, prospective analysis of consecutive ASD patients electing for nonop care. Inclusion criteria: age>18 yr, ASD and min 2-yr follow-up or conversion to op care. Efforts were made to maximize standard multimodality nonop care.

Results: Of 225 patients (mean age=53 yrs), 42 (19%) converted to op at a mean of 12.5 mos. At baseline, those who converted to op had greater BMI (27.3 vs 25.2, p=0.041), greater pelvic tilt (23° vs. 19°, p=0.043), greater pelvic incidence to lumbar lordosis mismatch (11° vs 4°, p=0.038), trend toward greater C7 SVA (70 vs 52 mm, p=0.075), greater ODI (37 vs 22, p<0.001), worse SF36 PCS (35 vs 44, p<0.001) and MCS (45 vs 51, p=0.012), worse SRS-22 (3.0 vs 3.6, p<0.001) and worse back (6.4 vs 4.4, p>0.001) and leg (4.4 vs 2.3, p<0.001) pain, but did not differ based on age (p=0.2), gender (p=0.3) or coronal Cobb angle (p=0.8). On multivariate analysis the only factors in the best-fit model were ODI (p=0.005) and SRS Appearance (p=0.032). Patients who converted to op had modest worsening of ODI (40 vs 37, p=0.085), SF36 PCS (33 vs 36; p=0.009) and back pain (7.1 vs 6.3, p=0.024) prior to surgery, but other outcomes and radiographic

measures did not significantly change. Min 2-yr post-op follow-up was available for 27 who converted to op, and all HRQL measures improved significantly ($p<0.007$). Those remaining nonop had no clinically significant changes in HRQL during the observation period.

Conclusion: Of 225 ASD patients treated nonop, the 19% who converted to op had greater baseline sagittal spinopelvic deformity and poorer outcomes scores. Surprisingly, appearance was a driver of operative conversion. These data suggest that nonop care at best maintains levels of pain and disability and patients with greater pain and disability tend to convert to op care.

SUPPLEMENTAL DATA: none

(No Image Selected)

Abstract Details

CURRENT CATEGORY: Non-Operative Treatment Methods

Meeting Type: Both Annual Meeting and IMAST

Session Type: Podium or E-Poster

PRESENTATION TYPE: Clinical Study - Therapeutic : Level II

SUB-PRESENTATION TYPE: Level II

KEYWORDS: Adult spinal deformity, Non-operative treatment, Sagittal alignment, Pelvic parameters.

Authorship: Study group

Enrolled Consecutively?: Yes

Funding: No

Grant Year:

Patients eligible: 2085

Patients enrolled: 498

Patients reached follow-up criteria: 55%

Time Frame: 2008-2011

Time period for follow-up: 2yrs or time point of cross-over to surgery

FDA Signature:

Financial Relationships: Justin Smith: Yes Financial Relationship;Consultant:Biomet, DePuy, Medtronic, Globus:Active;Advisory Board or Panel:AOSpine NA:Active;Grants/Research Support:DePuy:Active;Speaker:Biomet, Globus, AOSpine NA, DePuy:Active | Christopher Shaffrey: Yes Financial Relationship;Consultant:Biomet:Active;Other Financial or Material Support (royalties, patents, etc.):Medtronic:Active;Grants/Research Support:NIH:Active;Grants/Research Support:Department of Defense:Active;Grants/Research Support:AO:Active;Grants/Research Support:NACTN:Active;Consultant:Medtronic:Active;Consultant:Nuvasive:Active;Other Financial or Material Support (royalties, patents, etc.):Biomet:Active;Consultant:Globus:Active;Other Financial or Material Support (royalties, patents, etc.):Biomet:Active;Consultant:Biomet:Active;Other Financial or Material Support (royalties, patents, etc.):Medtronic:Active;Grants/Research Support:NIH:Active;Grants/Research Support:Department of Defense:Active;Grants/Research Support:AO:Active;Grants/Research Support:NACTN:Active;Consultant:Medtronic:Active;Consultant:Nuvasive:Active;Other Financial or Material Support (royalties, patents, etc.):Biomet:Active;Consultant:Globus:Active;Other Financial or Material Support (royalties, patents, etc.):Biomet:Active | Virginie Lafage: Yes Financial Relationship;Other Financial or Material Support (royalties, patents, etc.):Nemaris Inc.:Active;Grants/Research Support:DepuySpine, ISSGF, SRS:Active;Consultant:Medtronic:Active;Speaker:DepuySpine, Globus, K2M, Nuvasive, Medtronic:Active | Frank Schwab: Yes Financial Relationship;Consultant:MSD:Active;Consultant:DePuy Spine:Active;Grants/Research Support:ISSG:Active;Other Financial or Material Support (royalties, patents, etc.):Nemaris:Active;Grants/Research Support:NIH:Active;Grants/Research Support:AO:Active;Grants/Research Support:DePuy Spine:Active;Consultant:MSD:Active;Consultant:DePuy Spine:Active;Grants/Research Support:ISSG:Active;Other Financial or Material Support (royalties, patents, etc.):Nemaris:Active;Grants/Research Support:NIH:Active;Grants/Research Support:AO:Active;Grants/Research Support:DePuy Spine:Active | Themistocles Protopsaltis: Yes Financial Relationship;Speaker:K2M:Active;Speaker:Alphatec Spine :Active;Consultant:Globus:Active | Eric Klineberg:

Yes Financial Relationship;Grants/Research Support:Depuy Synthes Spine:Active;Consultant:Depuy Synthes Spine:Active;Speaker:AO:Active;Grants/Research Support:OREF:Active | Munish Gupta: Yes Financial Relationship;Consultant:depuy,medtronic, orthofix:Active;Advisory Board or Panel:depuy:Active;Other Financial or Material Support (royalties, patents, etc.):Depuy:Active;Other Financial or Material Support (royalties, patents, etc.):Spinal Ventures:Active;Advisory Board or Panel:FOSA:Active | Kai-Ming Fu: Yes Financial Relationship;Consultant:medtronic:Active;Consultant:Depuy:Active | Richard Hostin: Yes Financial Relationship;Grants/Research Support:Depuy Spine:Active;Consultant:Depuy Spine :Active;Grants/Research Support:NuVasive :Active;Grants/Research Support:Seeger :Active;Grants/Research Support:DJO:Active;Grants/Research Support:K2M:Active | Vedat Deviren: Yes Financial Relationship;Consultant:Nuvasive:Active;Other Financial or Material Support (royalties, patents, etc.):Nuvasive:Active;Consultant:Stryker:Active;Consultant:Guidepoint:Active | Robert Hart: Yes Financial Relationship;Other Financial or Material Support (royalties, patents, etc.):SeaSpine, Depuy:Active;Consultant:Depuy, Medtronic:Active;Grants/Research Support:Depuy, Medtronic, OREF, Synthes, Globus:Active | Douglas Burton: Yes Financial Relationship;Consultant:DePuy Spine:Active;Grants/Research Support:DePuy Spine:Active;Other Financial or Material Support (royalties, patents, etc.):DePuy Spine:Active | Shay Bess: Yes Financial Relationship;Advisory Board or Panel:Allosource:Active;Consultant:Depuy Spine:Active;Grants/Research Support:Depuy Spine:Active;Other Financial or Material Support (royalties, patents, etc.):Pioneer Spine:Active;Consultant:Medtronic:Active;Consultant:K2M:Active;Grants/Research Support:Medtronic:Active | Christopher Ames: Yes Financial Relationship;Consultant:stryker:Active;Consultant:medtronic:Active;Consultant:depuy:Active;Other Financial or Material Support (royalties, patents, etc.):Biomet Spine:Active;Other Financial or Material Support (royalties, patents, etc.):aesculap:Active;Other Financial or Material Support (royalties, patents, etc.):Fish & Richardson, P.C.:Active;Salary, Contractual Services:UCSF:Active;Other Financial or Material Support (royalties, patents, etc.):Visualase:Active;Other Financial or Material Support (royalties, patents, etc.):Doctors Research Group:Active;Other Financial or Material Support (royalties, patents, etc.):Baxano Surgical:Active | International Spine Study Group: Yes Financial Relationship;Grants/Research Support:DePuy Spine:Active;Grants/Research Support:Medtronic Sofamor Danek:Active

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