

SMISS 2022: E-Poster #11



Radiographic and Patient-Reported Outcomes in a Large Cohort of Patients Undergoing Anterior Cervical Discectomy and Fusion using Hydroxyapatite-coated PEEK Interbody Spacers: Two-Year Results

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Introduction



- Interbody spacers are today's mainstay of facilitating fusion with ACDF
- PEEK spacers offer a modulus of elasticity most similar to the vertebral bodies (1)
- Growing body of evidence supports incorporating hydroxyapatite (HA) into these spacers to provide an even more favorable environment for bone ongrowth, further facilitating fusion (2)

Objectives



- Present two-year radiographic and patient-reported outcomes in a large, growing cohort of patients undergoing ACDF with HA-PEEK interbody spacers
- Secondly, to update our presentation at SMISS '21, in which one-year data was presented

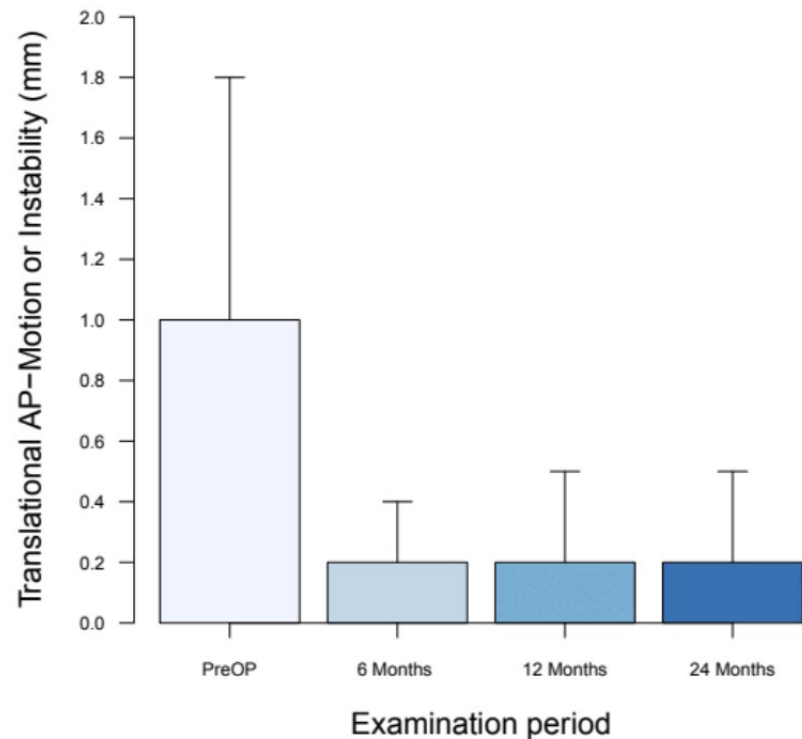
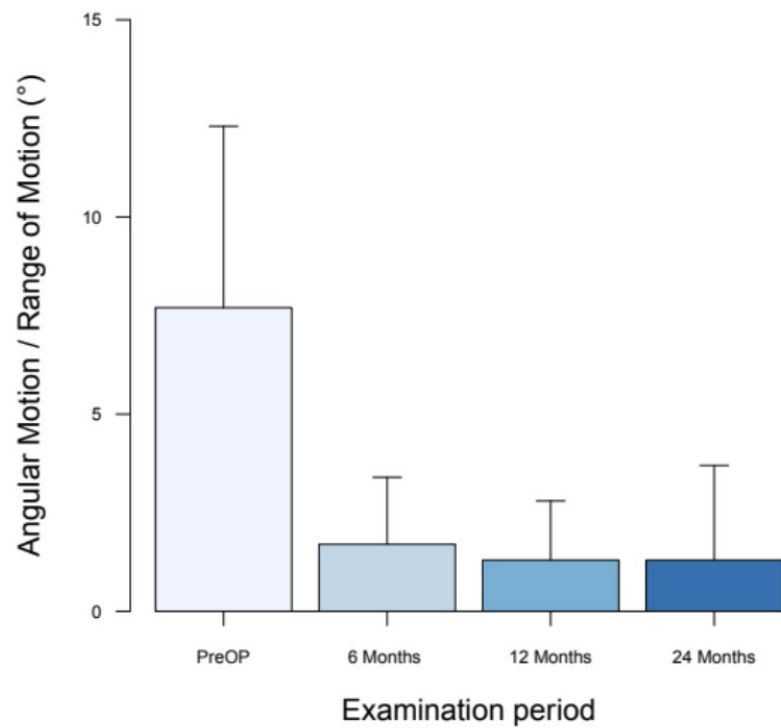
Methods



- Patient enrollment began in 2018 and continues through present day
 - 1109 patients across 27 centers
 - To date, 214 and 39 patients have completed 12 and 24-month follow up respectively
- Levels fused range from C3-T1
- Interbody fusion was assessed by individual level with dynamic flexion-extension radiographs by an independent researcher (3)
 - Fusion criteria is ≤ 4 degrees range of motion (4) (5)
- Secondary outcomes included NDI, VAS neck, VAS arm, patient satisfaction, medication usage, and adverse events

Results

- 2255 levels have been fused in total
 - 33.7% of patients had 1 level fused, 36.1% had 2 levels fused, and 30.2% had 3+ levels fused
- **Fusion was confirmed in 95% and 94% of all levels at 12 and 24 months** respectively
 - Median segmental range of motion at 24 months = 0.5°
- **NDI** declined from 46.2 preoperatively to 20.4 at 24 months ($p < 0.01$)
- **VAS Neck** (62.6 to 17.0) and **Arm** (40.5 to 10.4) both decreased significantly at 24 months ($p < 0.01$)
- At 24 months, **95% of patients were at least somewhat satisfied**
- **Opioid use** decreased to 12.8% from 37.9% preoperatively
- 3 patients have undergone interbody revision



Conclusion



- In this multicenter ACDF cohort, fusion rate at 24 months was 94%
- Employing the osteoconductive properties of HA with PEEK interbody cages seems to be a safe and viable option in facilitating anterior cervical fusion, a benefit described in other areas of orthopaedics (6)

References



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