Lumbar Spinal Disc Replacement in a Community Practice Setting
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Introduction
- Comparative studies for a lumbar TDR in a community setting outside of an IDE setting are few.

Purpose
- Compare a lumbar TDR for one level conditions to fusion in a community spine practice.
- Compare off label combination of disc replacement and spinal fusion as a “hybrid” construct for multilevel conditions.

Methods
- TDR (n=26) and single-level fusion (n=62) cohorts.
- TDR hybrids (n= 21) and 2-level A/P fusion (n=50) cohorts.
- Prospective outcomes, 2-4 year follow-up.
- Hospitalization (LOS, EBL, implant costs).
- Revisions, secondary operations.

Results
- Both TDR and spinal fusion groups had significantly improved outcomes at all follow-up periods for both single and multilevel cases.
- There was no significant difference in outcomes between single level and multilevel cases within both the fusion and TDR groups.
- Single level cases, the TDR group had significantly greater ODI improvement relative to the fusion group at all follow-up periods.
- Single level TDR had trend for greater VAS improvement at 1-2 yr and 2-4 yr follow-up periods.
- For multi-level cases, the improvement of hybrid was not significantly greater than for fusion at all follow-up periods.
- Implant costs were less for single level total disc replacement compared to spinal fusion but equivalent or greater for hybrid constructs compared to multilevel fusion constructs.
- Range of motion was maintained in the total disc replacement groups.
- Secondary surgeries were greater for the fusion groups (instrumentation removal and adjacent segment conditions).

Discussion
- Outcomes of current 1-level study similar to IDE studies and favor TDR.
- Current TDR (& hybrid reconstructions) outcomes equivalent to or trend for better than fusion for properly selected patients.
- TDR: Lower short-term reoperation rates and shorter return to work.

Outcomes:
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- Single level cases, the TDR group had significantly greater ODI improvement relative to the fusion group at all follow-up periods.
- Single level TDR had trend for greater VAS improvement at 1-2 yr and 2-4 yr follow-up periods.
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- Implant costs were less for single level total disc replacement compared to spinal fusion but equivalent or greater for hybrid constructs compared to multilevel fusion constructs.
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