

Radiographic Fusion Rates Following Anterior Cervical Discectomy and Fusion with Bone Graft Combined with Autogenous Bone Marrow

Youxi Lin, Baoge Liu, Wei Cui, Tianhua Rong, Bingxuan
Wu, Dacheng Sang, Dian Wang, Bowei Xiao

Department of Orthopedic Surgery, Beijing Tiantan
Hospital, Capital Medical University, Beijing, China

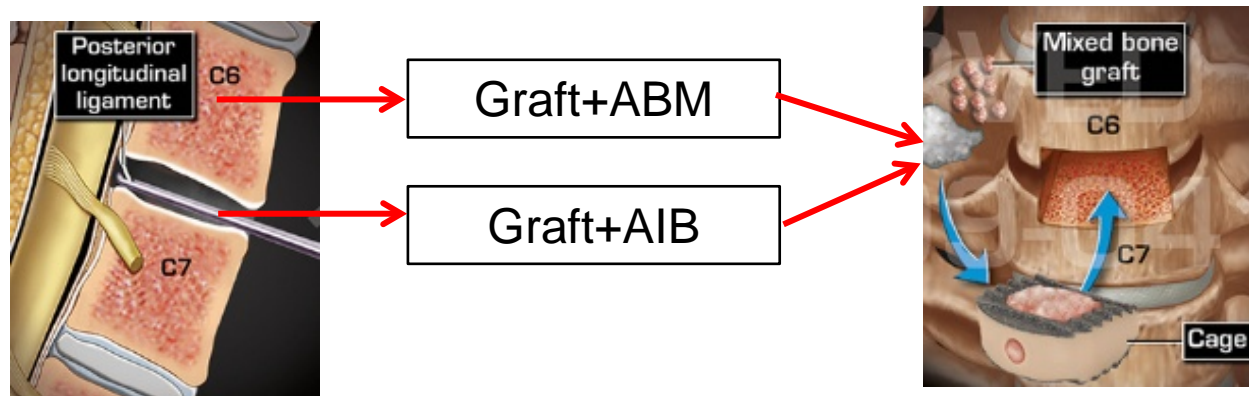
Background

- Anterior cervical discectomy and fusion are considered the criterion standard of surgical treatment for cervical myelopathy and radiculopathy.
- Osteoconductive and resorbable granules are widely used in as bone graft substitutes with a general fusion rate of more than 90%.



Objective

- The aim of this study was to evaluate fusion rate and compare a granule graft + autogenous bone marrow with granule graft + autogenous intervertebral blood in the setting of anterior cervical discectomy and fusion (ACDF).

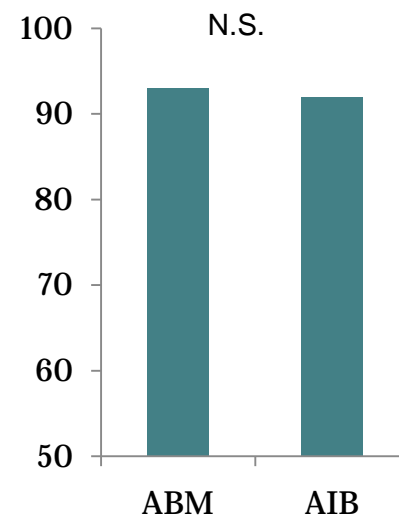


Methods

- From 2012 to 2018, patients undergoing anterior cervical discectomy and fusion and with at least 24 months follow-up were identified and separated into groups based on implant construct and species of bone graft compounds.
- Demographic variables, fusion rates, and reoperation rates were compared between groups.
- Continuous variables were compared using Student t test. Fusion and revision rates were compared using Pearson χ test.

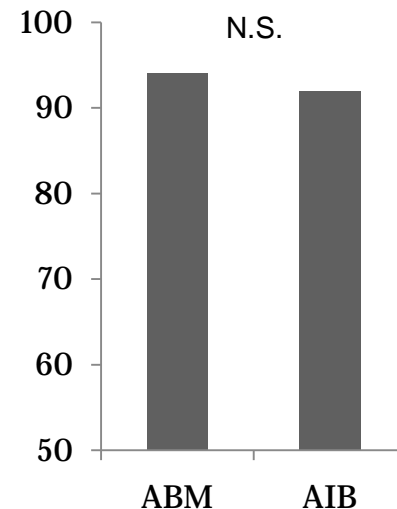
Results

- One hundred and ninety four patients with 426 cervical segments were included in the cohort.
- Fusion rates were similar for granule graft + autogenous bone marrow compared to granule graft + autogenous intervertebral blood in stand-alone cage construct (93% vs. 92%).



Results

- In anterior plate construct group there was a tendency of higher fusion rate in autogenous bone marrow subgroup than intervertebral blood subgroup without statistical significance (94% vs. 92%).
- There were no significant differences in anterior plate construct versus stand-alone cage construct in terms of fusion and reoperation.



Conclusion

- ACDF using granule graft + autogenous bone marrow had high fusion rate and showed similar clinical results as compared to ACDF using granule graft + autogenous intervertebral blood with correspondingly low reoperation rates.

Disclosure

- None