

Bioactive glass-ceramic cage

- Clinical and radiological outcomes of non-window-type bioactive glass-ceramic cage in single-level ACDF versus PEEK cage filled with autologous bone
- Efficacy of Allograft Versus Bioactive Glass-Ceramic Cage in Anterior Cervical Discectomy and Fusion: A Randomized Controlled Study
- Anterior Cervical Discectomy and Fusion Performed Using a CaO-SiO₂-P₂O₅-B₂O₃ Bioactive Glass Ceramic or Polyetheretherketone Cage Filled with Hydroxyapatite/beta-Tricalcium Phosphate: A Prospective Randomized Controlled Trial
- Long-term results comparison after anterior cervical discectomy with BGS-7 spacer (NOVOMAX®-C) and allograft spacer: A prospective observational study
- Feasibility and safety of a CaO-SiO₂-P₂O₅-B₂O₃ bioactive glass ceramic spacer in posterior lumbar interbody fusion compared with polyetheretherketone cage: a prospective randomized controlled trial
- Feasibility of CaO-SiO₂-P₂O₅-B₂O₃ Bioactive Glass Ceramic Cage in Anterior Cervical Discectomy and Fusion
- Comparison of the effectiveness and safety of bioactive glass ceramic to allograft bone for anterior cervical discectomy and fusion with anterior plate fixation
- Total spondylectomy for en bloc resection of lung cancer invading the chest wall and thoracic spine. Case report

Bioactive glass-ceramic (BGC) cage is a substitute for polyether ether ketone (PEEK) cages in [anterior cervical discectomy and fusion](#) (ACDF). Only a few comparative studies exist using PEEK and non-window-type BGC cages (CaO-SiO₂-P₂O₅-B₂O₃) in single-level ACDF. This study compared PEEK cages filled with autologous iliac bone grafts and BGC cages regarding clinical safety and effectiveness. A retrospective case series was performed on 40 patients who underwent single-level ACDF between October 2020 and July 2021 by a single orthopedic spine surgeon. The spacers used in each ACDF were a PEEK cage with a void filled with an autologous iliac bone graft and a non-window-type BGC cage in 20 cases. The grafts were compared pre-operatively and post-operatively at 6 weeks and 3, 6, and 12 months. Post-operative complications were investigated in each group. Clinical outcome was measured, including Visual Analog Scale (VAS) scores of neck and arm pains, Japanese Orthopedic Association score (JOA), and Neck Disability Index (NDI). Dynamic lateral radiographs were used to assess the inter-spinous motion (ISM) between the fusion segment and subsidence. The fusion status was evaluated using a computed tomography (CT) scan. Overall, 39 patients (19 and 20 patients in the PEEK and BGC groups, respectively) were recruited. Eighteen (94.7%) and 19 (95.0%) patients in the PEEK and BGC groups, respectively, were fused 12 months post-operatively, as assessed by ISM in dynamic lateral radiograph and bone bridging formation proven in CT scan. The PEEK and BGC groups showed substantial improvement in neck and arm VAS, JOA, and NDI scores. No substantial difference was found in clinical and radiological outcomes between the PEEK and BGC groups. However, the operation time was considerably shorter in the BGC group than in the PEEK group. In conclusion, a non-window-type BGC cage is a feasible substitute for a PEEK cage with an autologous iliac bone graft in single-level ACDF ¹⁾

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Kwon JW, Lee YH, Lee BH, Kim JH, Suk KS. Clinical and radiological outcomes of non-window-type bioactive glass-ceramic cage in single-level ACDF versus PEEK cage filled with autologous bone. Sci Rep. 2024 Feb 19;14(1):4035. doi: 10.1038/s41598-024-54786-3. PMID: 38369553; PMCID:

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