

*Posterior cervical fusion for trauma
using silicated calcium phosphate bone
graft substitute: A case report with 3-
year follow up.*

Jacob M. Drew, MD¹
Mark S. Eskander, MD¹
Michelle Aubin, MD¹
Patrick J. Connolly, MD¹

¹University of Massachusetts Medical School
Department of Orthopedic Surgery
Worcester, Massachusetts, USA

Posterior cervical fusion for trauma using silicated calcium phosphate bone graft substitute: A case report with 3-year follow up

Purpose: This case report presents a young female trauma patient who was treated with posterior cervical fusion, using silicated calcium phosphate bone graft substitute (BGS) for a dislocation of C7 on T1. The purpose is to demonstrate that excellent clinical and radiographic fusion is attained using this commercially available BGS in the setting of cervical trauma. **Methods:** A 56 year old female suffered an unwitnessed fall down a flight of stairs, and presented to the emergency room with acute paraplegia. Sensory function is absent below the nipple line, and strength is 0/5 in bilateral lower extremities. Radiographs show bilateral jumped facets at C7-T1. The patient is immediately placed into a halo, and cervical traction is applied up to 50 pounds without reduction and only minimal improvement of overall alignment. The patient was taken emergently to the operating room, where an open posterior reduction is performed, along with posterior decompression at C7-T1 and posterior cervical fusion from C4-T3. Additionally, silicated calcium phosphate BGS is mixed with local autograft in a 1:1 ratio and placed in the posterolateral gutters to augment the fusion. **Results:** Postoperatively, the patient's neurologic exam has remained unchanged; she is a C7 paraplegic. As early as 6 months, radiographs demonstrate signs of solid bony fusion (Figure 1). At 3 years, radiographs show excellent bony alignment and evidence of solid fusion (Figure 2). **Conclusion:** Silicated calcium phosphate is a commercially-available BGS that is both safe and effective for use in the cervical spine following trauma as demonstrated in this patient at three year follow-up.

Figure 1. AP Radiograph 6 Months after Posterior Cervical Fusion



Figure 2. AP Radiograph 3 Years after Posterior Cervical Fusion

