

Bilateral posterior C 1-2 transfacet screw placement

Bilateral posterior C 1-2 transfacet screw placement with associated posterior **bone graft wiring** is the accepted **atlantoaxial instability treatment**. This technique was modified to treat 19 patients with atlantoaxial instability and unilateral anomalies that prevented placement of a screw across the C1-2 facet. In these cases, a single contralateral transarticular screw was placed in conjunction with interspinous bone graft wiring to avoid neural or vertebral artery injury and to provide C1-2 stability. Postoperatively, all 19 patients were placed in Philadelphia collars (mean immobilization 8 weeks, range 6-12 weeks). Unilateral C1-2 facet screw fixation was needed for the following reasons: a high-riding transverse foramen of the C-2 vertebra present in 13 patients (left side in eight, right side in five), poor screw purchase in two (left side in both), screw malposition in one (left side), severe degenerative arthritis in one (right side), neurofibroma in one (right side), and fracture of the C-1 lateral mass in one (left side). Six weeks postsurgery, one patient presented with a broken screw and required occipitocervical fusion with a Steinmann pin and wire cable from the occiput to C-3 to achieve solid fusion. Solid fusions were achieved in the other 18 patients (mean follow-up period 31 months, range 14-54 months); there was no delayed screw breakage, wire breakage, or spinal instability. There were no operative or postoperative neurological or vascular complications. The authors' experience demonstrates that unilateral C1-2 facet screw fixation with interspinous bone graft wiring is an excellent alternative in the treatment of atlantoaxial instability when bilateral screw fixation is contraindicated ¹⁾.

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Song GS, Theodore N, Dickman CA, Sonntag VK. Unilateral posterior atlantoaxial transarticular screw fixation. J Neurosurg. 1997 Dec;87(6):851-5. doi: 10.3171/jns.1997.87.6.0851. PMID: 9384394.

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