Atlantoaxial spine

A study included all the patients who presented over a 6-year period to Memorial Sloan-Kettering Cancer Center with metastatic disease to the atlantoaxial spine. Demographics and diagnoses were obtained. Magnetic resonance images, computed tomography scans, and plain radiographs were reviewed. At presentation, patients with normal alignment or minimal subluxation were considered for nonoperative therapy, either external beam radiation therapy or chemotherapy. Surgery was reserved for patients with significant fracture subluxations, including atlantoaxial displacement more than 5 mm or angulation exceeding 11 degrees with displacement more than 3.5 mm. Additional operative indications were prior external beam radiation therapy administered to overlapping spinal ports, unknown primary pain, and persistent pain after nonoperative therapy. Patient outcome was evaluated for pain relief, neurologic outcomes, degree of spine involvement, and survival.

Symptomatic metastatic tumor involving the atlantoaxial spine was diagnosed in 33 patients. The mean age at presentation was 57 years. Histologic diagnoses varied widely. All the patients presented with severe mechanical neck pain, but no patient had myelopathy related to epidural tumor or fracture subluxation. Of these 33 patients, 25 patients initially were treated nonoperatively with either external beam radiation therapy (n = 23) or chemotherapy (n = 2), and 8 patients underwent initial operation. In this nonoperatively treated group, 23 of the 25 patients had significant pain resolution until death or last follow-up assessment. Five patients required subsequent operation: three for significant fracture subluxations and two after neoadjuvant chemotherapy. Of the fracture subluxations, two were present before external beam radiation therapy, and one was delayed from rapid tumor progression. Posterior instrumentation was performed in the 13 patients who underwent surgery. No patient required anterior decompression and stabilization. Significant pain resolution was achieved in all the surgically treated patients.

External beam radiation therapy was used successfully to treat patients with normal alignment or minimal subluxation. Selected patients warrant immediate stabilization. Patients with persistent pain and inability to wean from a hard collar after nonoperative therapy also should be considered for surgery. Posterior stabilization provides pain relief and neurologic preservation or recovery without the need for anterior decompression ¹⁾.

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Bilsky MH, Shannon FJ, Sheppard S, Prabhu V, Boland PJ. Diagnosis and management of a metastatic tumor in the atlantoaxial spine. Spine (Phila Pa 1976). 2002 May 15;27(10):1062-9. PubMed PMID: 12004173.

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