

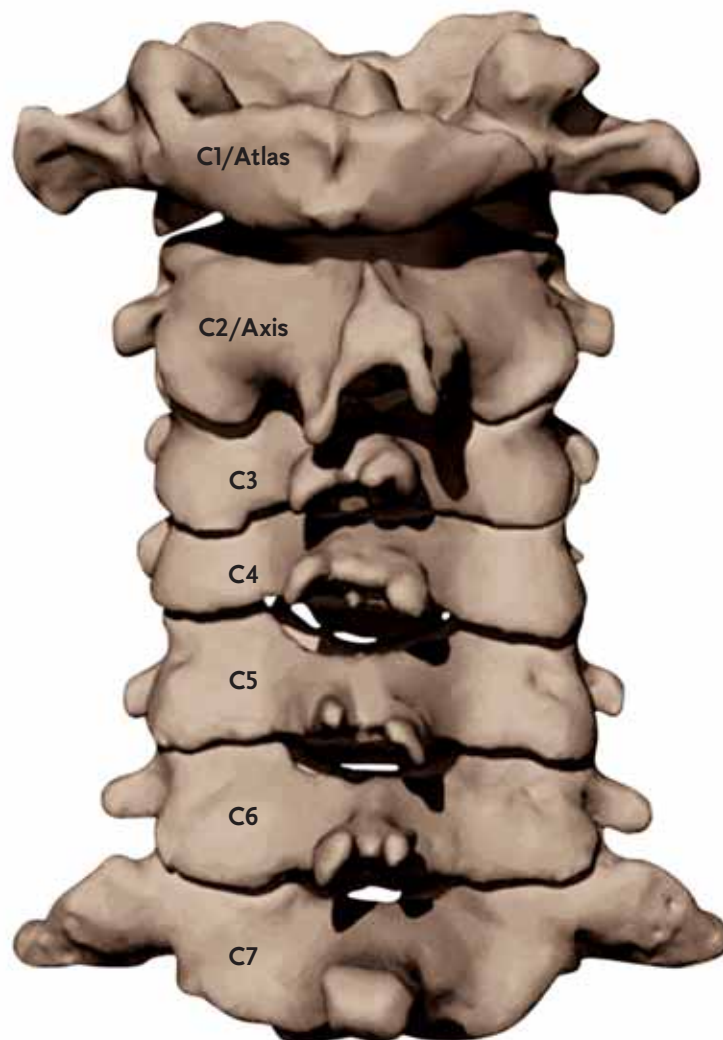
POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Decompression – Surgery to relieve pressure on neural or vascular structures

Fusion – Surgically induce union or healing of bone

Basic Anatomical Landmarks: Posterior Cervical Spine

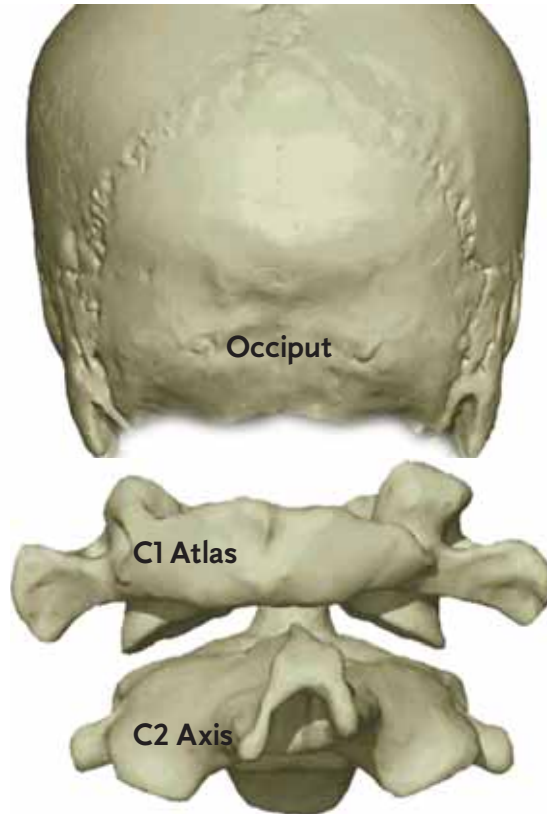
Posterior View
Bone Structure of the Cervical Spine
(C1/Atlas-C7)



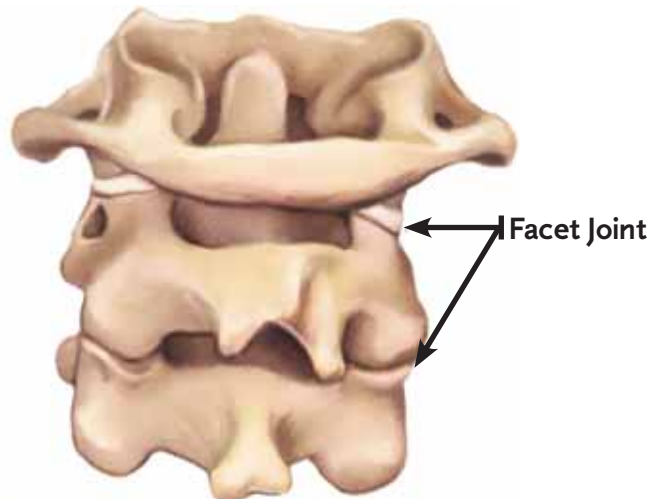
POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Basic Anatomical Landmarks: Posterior Cervical Spine

Posterior View Occipital-C2



Posterior View C1-C3



Facet Joints

A **Facet Joint** is a synovial joint formed by the inferior articular process of one vertebra and the superior process of the adjacent vertebra. Also called the **Zygapophyseal Joint**.

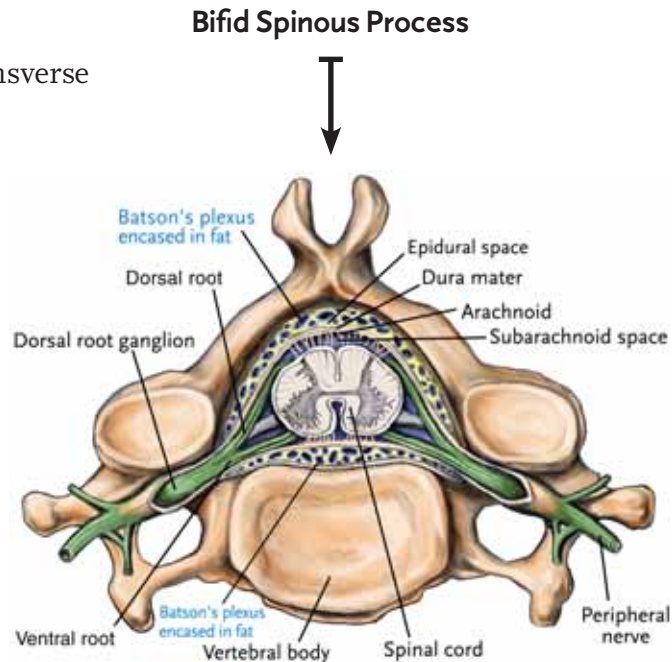
POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Basic Anatomical Landmarks: Posterior Cervical Spine

Vertebral Bodies

- C2-C6 have bifid spinous processes
- Vertebral arteries pass through the transverse foramen from C3-C6 (sometimes C7)

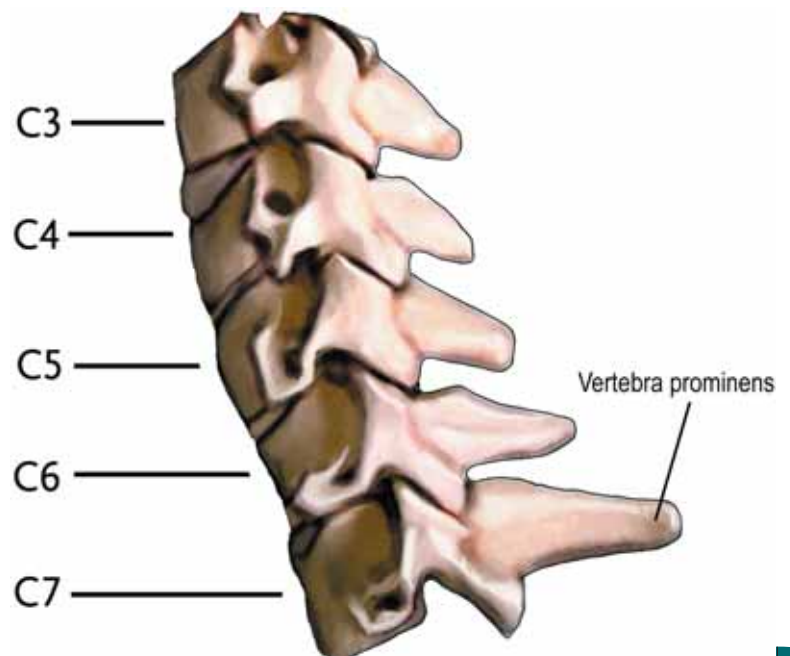
Axial View Cervical Vertebrae



Vertebra Prominens

C7 is sometimes referred to as the vertebra prominens because it has a longer and larger spinous process. This spinous process is easily palpated at the base of the neck and is used as an anatomic landmark when deciding where an incision should be made.

Lateral View C3-C7



POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Approach/Patient Position

For a posterior cervical procedure the patient is placed prone in an appropriate manner to avoid pressure points. The head may be placed in a padded head holder or secured in three point pins. The back and neck are prepped and draped in a sterile fashion. A midline incision is made and dissection is carried down to the spinous processes of the appropriate vertebrae.

The posterior musculature is dissected and retracted laterally to expose the facets and the transverse processes. Attention is given to the preservation of the most cephalad (toward the head) facet capsule while all other soft tissue is removed from the facets to be included in the fusion. Attention is now directed toward instrumentation of the spine.

Prone Position



POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Techniques

- Laminotomy** – An opening made in a lamina. Formation of a hole in the lamina without disrupting the continuity of the entire lamina to approach the intervertebral disc or neural structures
- Foraminotomy** – Surgical opening or enlargement of the bony opening traversed by a nerve root as it leaves the spinal canal. A procedure carried out alone or in conjunction with disc surgery
- Laminoplasty** – Surgical reconstruction of the posterior vertebral elements to increase space for the neural structures while maintaining the posterior arch
- Laminectomy** – Surgical removal of part or all of the posterior vertebral elements to allow space for the neural structures
- Discectomy** – Surgical removal of part or all of an intervertebral disc
- Fusion** – Surgically induces union or healing of bone
- Occipital Cervical Fusion** – Fusion of the Occiput to C2
- Sub-axial Fusion** – Most common posterior cervical procedure. A sub-axial cervical fusion is an instrumented fixation of C2-C7. Typically this procedure involves up to four levels of fixation
- Cervical/Thoracic Fusion** – Fusion that spans the cervical-thoracic junction of the spine

POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Technique: Laminoplasty

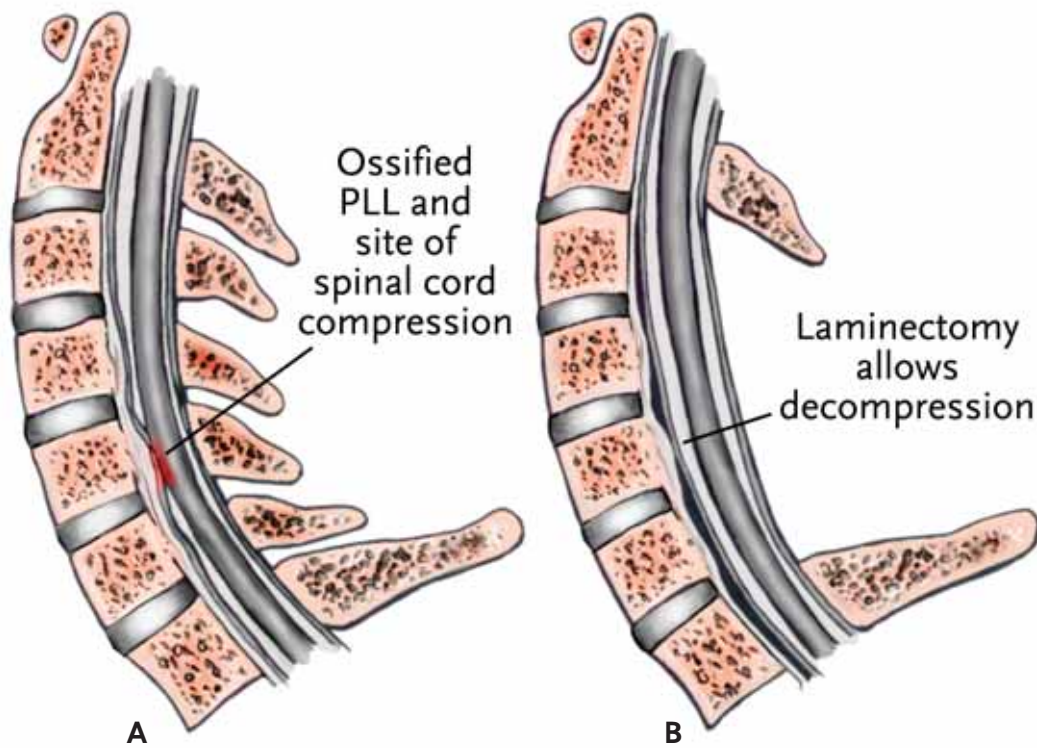
Laminoplasty – Surgical reconstruction of the posterior vertebral elements to increase space for the neural structures while maintaining the posterior arch

Technique: Laminectomy and Fusion

Laminectomy – Partial or complete removal of the bony elements allowing increased space for neural structures

Fusion – Surgically induce union or healing of bone

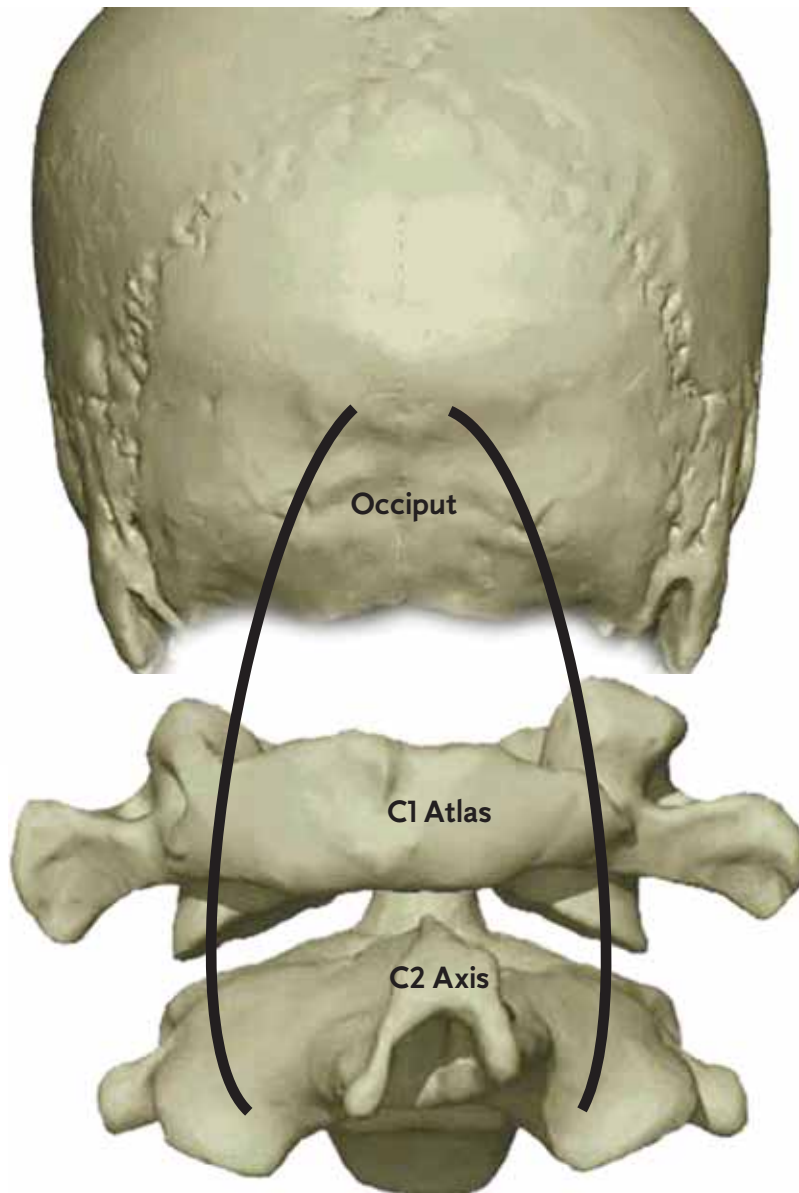
Illustration A shows spinal cord compression from an ossified PLL at C4, C5 and C6. Illustration B shows posterior laminectomy at those levels for decompression of the spinal cord



POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Technique: Occipital/Cervical Fusion

Occipital/Cervical Fusion – Instrumented fixation and fusion of the occiput to the cervical spine

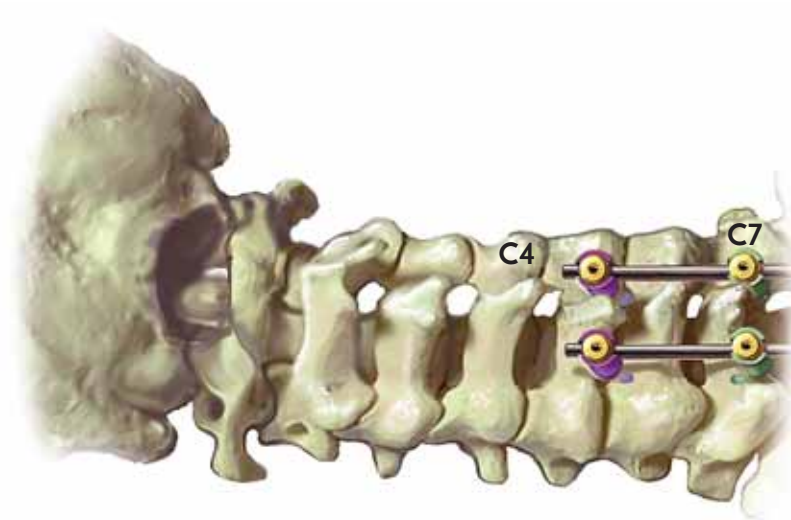


POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Technique: Sub-axial Fusion

Sub-axial Fusion – Most common posterior cervical procedure. A sub-axial cervical fusion is an instrumented fixation of specific cervical vertebrae between levels C2-C7. Typically this procedure involves up to four levels of fixation

Sub-axial Fixation of C5-C7 with Hooks and Rods

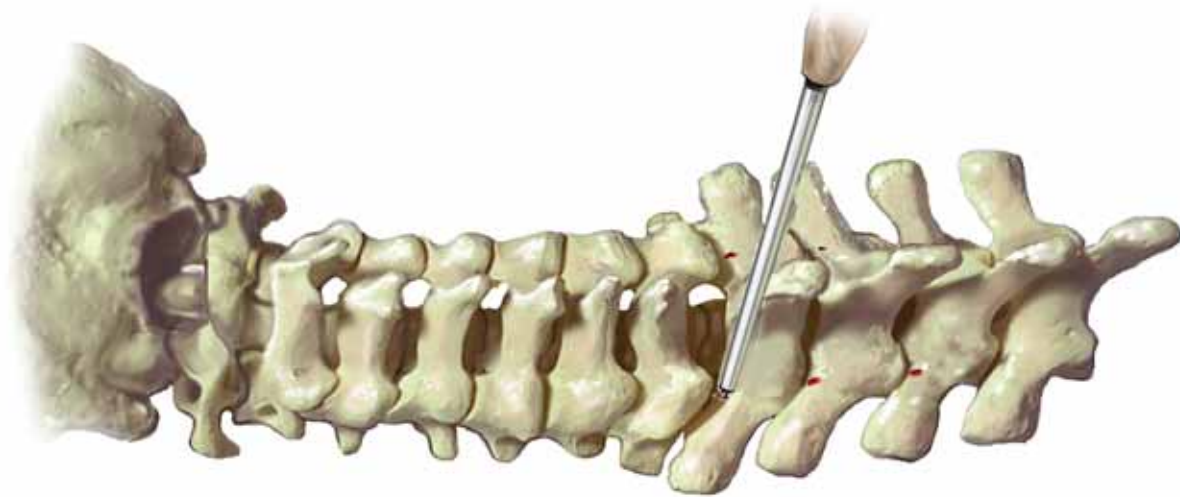


POSTERIOR CERVICAL DECOMPRESSION AND FUSION

Technique: Cervical/Thoracic Fusion

Cervical/Thoracic Fusion – Fusion that spans the cervical-thoracic junction of the spine.

Preparation of the Cervical/Thoracic Junction



Fixation of C5-T3 Utilizing Hooks, Screws and Rods

Note: Screws are intended for T1-T3 use only

