Cervical Neck Pain or Cervical Radiculopathy

Appropriate cervical spine (c-spine) imaging and use of intravenous contrast (venous dye) for neck pain varies depending on clinical scenario.

In individuals with new or increasing nontraumatic neck pain (no high-risk factors), x-rays (https://www.radiologyinfo.org/en/info/bonerad) are usually appropriate as first imaging test; MRI (https://www.radiologyinfo.org/en/info/mri-brain) or CT (https://www.radiologyinfo.org/en/info/headct) without contrast may be appropriate.

In cases with spinal nerve irritation (pinched nerve), MRI without contrast is usually appropriate, and x-rays or CT without contrast may be appropriate.

If there is history of prior c-spine surgery, x-rays or CT without contrast is usually appropriate; MRI with or without contrast (or both) or CT myelography (https://www.radiologyinfo.org/en/info/myelography) (contrast injection in space around spinal cord) may be appropriate.

If infection is suspected, MRI without and with contrast is usually appropriate; x-rays, CT, or MRI with or without contrast may be appropriate.

In individuals with cancerous tumors, MRI without and with or only without contrast is usually appropriate; x-rays, CT with or without contrast, MRI with contrast, or bone scan or CT may also be appropriate.

With headaches (https://www.radiologyinfo.org/en/info/headache) originating in the c-spine without weakened nerve function, MRI or CT without contrast may be appropriate, as well as x-rays or nerve block (https://www.radiologyinfo.org/en/info/nerveblock) injection.

In chronic neck pain, x-rays are usually appropriate as initial imaging. MRI without contrast may be appropriate.

If x-rays show degenerative changes, MRI without contrast is usually appropriate. CT without contrast or CT myelography may be appropriate.

If x-rays show hardening of the connecting fibers of the neck vertebrae, CT without contrast is usually appropriate; CT myelography or MRI without contrast may be appropriate.

— By Susan Anemone and Bruno Policeni, MD, MBA. This information originally appeared in the *Journal of the American College of Radiology*.

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