

Evidence Discussion (Post-Operative Spinal Disorders: SP-15)

Despite advances made in high-resolution spinal imaging, plain films remain integral in providing optimal care for spine patients and continue to provide critical information that cannot be obtained with other imaging modalities. [2] X-ray imaging with anteroposterior, lateral, oblique and flexion-extension views is considered the primary imaging modality for postoperative evaluation and can provide complementary information to advanced imaging. [1, 3] X-rays can provide information as to whether a concomitant instability is present which would further assist with pre-operative planning. Also, when prior surgery is a concern, x-ray provides additional clinical information as to the details of the hardware for which this detail can many times be obscured with advanced imaging techniques (MRI/CT). An x-ray often has a larger field-of-view than an MRI or CT and has the potential to identify more proximal or distal pathology in the spine that could ultimately assist in determining the patient's diagnosis. [2] X-rays can also determine whether an advanced diagnostic imaging study is actually needed, what specific advanced diagnostic imaging study is warranted and if contrast is required.

There are risks associated with advanced imaging including but not limited to radiation exposure, implanted device complications, metallic foreign body complications and contrast complications. [10] Studies have also linked the increase rate of imaging with the increase rate of surgery and also found early magnetic resonance imaging (MRI) had an eightfold increased risk of surgery. [8, 9]

Although most patients with acute neck or back pain will improve with 6 weeks of conservative care [3, 4, 5], conservative care would not be necessary for patients with prolonged intractable pain present within 6 months of surgery or if a red flag indication was present.

In general, initial plain x-rays and an initial course of conservative care can provide a significant clinical benefit that would outweigh the clinical harm from perhaps briefly delaying advanced imaging if needed. A course of conservative care or plain x-ray findings many times may obviate the need for advanced imaging which possess their own set of significant risks.

For revision thoracic or lumbar anterior spinal arthrodesis, CT angiography or MR angiography may be indicated, however, risks are present with these modalities including radiation exposure (CT), availability of the imaging modalities in close proximity to patients, potential out-of-pocket costs to patients, and sensitivity to patient movement (MRI). [6, 7]

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