CAR Standards for Performance of the Lumbosacral Spine

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The standards of the Canadian Association of Radiologists (CAR) are not rules, but are guidelines that attempt to define principles of practice that should generally produce radiological care. The physician and medical high-quality physicist may modify an existing standard as determined by the individual patient and available resources. Adherence to CAR standards will not assure a successful outcome in every situation. The standards should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed to obtaining the same results. The standards are not intended to establish a legal standard of care or conduct, and deviation from a standard does not, in and of itself, indicate or imply that such medical practice is below an acceptable level of care. The ultimate judgment regarding the propriety of any specific procedure or course of conduct must be made by the physician and medical physicist in light of all circumstances presented by the individual situation.

I. INTRODUCTION

Radiography of the lumbosacral (LS) spine is a proven and useful initial procedure for evaluation of the lumbosacral vertebral bodies, posterior elements, and disc spaces. This standard outlines the principles for the performance of high quality LS spine radiography.

All radiographic examinations should be performed in accordance with the CAR Standard for General (Plain) Radiography.

II. GOAL

The goal of the radiographic examination of the LS spine is to identify anatomic abnormalities or disease processes of the LS spine.

A. Indications for radiography of the LS spine include, but are not limited to:

   1. Trauma to, or potentially involving, the LS spine.
   2. Back pain in the lumbar region.
   3. Pain radiating into legs.
   4. In children, limping or refusal to bear weight, suspected congenital anomaly of the LS spine, and syndromes associated with spinal abnormalities.
   5. Current or prior surgery to the LS spine.
   6. Evaluation of a LS spine abnormality seen on another imaging study, e.g. bone scan.
   7. Arthritis.
   8. Osteoporosis; compression fractures.
   9. Follow-up of previous LS spine abnormality.
   10. Evaluation of primary and secondary malignancy.

III. SPECIFICATIONS OF THE EXAMINATION

A. Adult Lumbosacral Spine Examination

   1. Anteroposterior and lateral views. The "breathing" technique described with Dorsal Spine examinations can also be used for the AP and lateral view of the Lumbosacral spine. These may be the initial and only views required, with the following views obtained when indicated:
      · Both oblique views
      · Coned down lateral view of the L5-S1 area
      · Angled AP view of L5-S1
      · Additional views, such as flexion and extension lateral views, may be helpful in completing the evaluation in selected cases.
If general radiography is not sufficient to resolve the questions, other studies should be performed to complete the evaluation, such as CT, MRI, or skeletal scintigraphy.

B. Pediatric Lumbosacral Spine Examination

In infants and children, AP and lateral views are usually sufficient. In older children and adolescents, oblique views and coned down lateral view of LS may be helpful. In children with back pain and inconclusive radiographs, skeletal scintigraphy may be helpful prior to CT or MRI.

IV. QUALITY CONTROL

1. The examination should completely demonstrate the entire lumbosacral spine, or the levels of clinical interest in a limited exam.
2. If prior lumbosacral spine films are available, they should be compared.

REFERENCES