Videofluoroscopy

Videofluoroscopy is a useful imaging modality for the demonstration of spinal intersegmental joint dysfunction. Other spinal pathologies are better demonstrated by alternative imaging methods. The guidelines and standards recommended herein presuppose that an appropriate patient history, clinical examination, plane film radiographs and additional diagnostic modalities have been performed to exclude pathology.

SPINAL PROTOCOL

Spinal Videofluoroscopy is used for the evaluation of suspected intersegmental joint dysfunction which has not been adequately demonstrated by other methods.

INDICATIONS

Spinal Videofluoroscopy should be performed following appropriate history, clinical examination, including diagnostic studies, and a reasonable period of conservative management (see below).

ACUTE/SUB-ACUTE

Videofluoroscopy is rarely indicated in the acute patient. Unusual circumstances may exist wherein there is inconclusive or equivocal evidence of intersegmental joint dysfunction from plain film radiography, CT, MRI or other appropriate imaging procedures. In those instances Spinal Videofluoroscopy may be appropriate, however, the study should not be performed until cessation of restrictive muscle spasm which prohibits evaluation of joint function.

CHRONIC

1. Persistent signs and symptoms or unsatisfactory response to chiropractic care as appropriately documented by the treating physician. (Generally accepted as exceeding 12 weeks).
2. Suspected persistent intersegmental joint dysfunction.
3. In circumstances where there is inconclusive or equivocal evidence of intersegmental joint dysfunction from plain film radiography, CT, MRI or other appropriate imaging procedures.

DELAYED TREATMENT

Videofluoroscopy may be indicated when chiropractic treatment has not been utilized or has been delayed and where inadequate explanation of findings of clinically evident joint dysfunction is documented.

RADIOGRAPHIC SIGNS OF INTERSEGMENTAL JOINT DYSFUNCTION

The following signs may be helpful in the selection of patients for Spinal Videofluoroscopy in those cases with persistent signs and symptoms following an appropriate conservative management (12 weeks).

a. hypermobility
b. hypomobility
c. aberrant motion
d. instability
e. aberrant coupling
f. paradoxical motion
g. evaluation of spinal arthrodesis

INDICATIONS FOR SPINAL VIDEOFLUOROSCOPY RE-EVALUATION

As with all radiographic procedures, re-examination should only be accomplished if the patient fails to respond to clinical management, or there is exacerbation of symptoms, or a progression of signs which are the result of intersegmental joint dysfunction.

Pursuant to the above, Spinal Videofluoroscopy re-evaluation may be performed at a 12-week

interval following the initial study.
The examination should be limited to the area in question, using only those positions and manoeuvres which previously demonstrated the abnormality.

CONTRA-INDICATIONS

1. Sufficient information regarding the intersegmental joint dysfunction has been obtained by other diagnostic procedures to establish appropriate case management.
2. Pregnancy.
3. Instances where motion is detrimental to the patient's well-being:
a. recent fractures;
b. dislocations;
c. pathological processes that may weaken restraining structures or osseous architecture;
d. severe neurological deficit.
4. Restrictive muscle spasm.

RELATIVE CONTRA-INDICATIONS

1. Patient's inability to co-operate due to physical or mental impairment.

TECHNICAL PROTOCOL FOR SPINAL VIDEOFLUOROSCOPY CERVICAL SPINE

A. MINIMUM EXAMINATION

Includes the following but must be preceded and supported by clinical and radiographic findings. A minimum of three repetitions should be performed and all fluoroscopic exposure must be videotaped. The patient should be examined standing when possible.

1. Lateral Projection
a. nodding
b. full range "forced" flexion and extension
c. relaxed flexion and extension
2. Oblique right and left
a. full range "forced" flexion and extension

B. ADDITIONAL EXAMINATION (AS INDICATED)

Right and left lateral flexion (open mouth and lower cervical)

C. OPTIONAL EXAMINATION

Unsupported cross table lateral flexion/extension.

D. CHECK LIGAMENT (ALAR) EXAMINATION

1. Lateral view, nodding
2. Right and left lateral flexion open mouth
3. Passive stress views. Cases of incomplete tear can only be demonstrated by a passively forced lateral flexion manoeuvre.

LUMBAR SPINE EXAMINATIONS

Spinal Videofluoroscopy of the lumbar spine is discouraged due to patient dosage and decreased image quality.
Patient selection is limited by size. The examination should not be performed on individuals exceeding 24 cm. in the A/P position and 32 cm. in the lateral position,.
A minimum of two repetitions should be performed and all fluoroscopic exposure must be videotaped. The patient should be examined with the pelvis stabilized to prevent other than spinal motion.

1. Lateral projection in flexion and extension
2. A/P right and left lateral bending

THORACIC SPINE AND SACROILIAC ARTICULATIONS

Spinal Videofluoroscopy examination of the thoracic spine or sacroiliac articulations is presently considered to be of little diagnostic value and is discouraged.

MINIMUM EQUIPMENT RECOMMENDATIONS

1. 125 KVP 1-3MA
2. Image intensifier with a minimum 12000:1 gain
3. 4.5 mm. of total filtration A1 equivalency
4. 6" minimum FOV with a freely-moving gantry
5. 9" minimum FOV without a freely-moving gantry (3 planes of movement)
6. Automatic Brightness Control must be utilized
7. Video recording equipment should have:

a. slow motion playback
b. pause mode
c. 4 recording head minimum

COMMENTARY

With the publication of these guidelines and subsequent adherence to these tenets by operators/users, the **C.C.R. no longer considers Spinal Videofluoroscopy as investigational within the chiropractic profession.**

Caution and certain avoidances must nonetheless be observed with the use of Videofluoroscopy. Among these are those ill-advised practices which include but are not limited to the following:

1. Spinal Videofluoroscopy is never appropriate in clinical practice to visualize the spinal adjustment or manipulation, nor is it efficacious to employ Videofluoroscopy as a "pre and post" evaluation procedure in conjunction with an adjustment or joint manipulation.
2. Spinal Videofluoroscopy must never be performed without videotaping of the procedure. This ensures accurate recording of pertinent information and time of exposure.
3. Spinal Videofluoroscopy serves only as an ancillary diagnostic imaging procedure.
4. Spinal Videofluoroscopy shall never be utilized as a replacement for static radiographic procedures.
5. Spinal Videofluoroscopy shall never be employed as a screening or cursory imaging device.

Laboratories as well as referring practitioners are responsible for the necessary documentation and protocols as stated above, regardless of the source of referral for the examination.

Practitioners utilizing Spinal Videofluoroscopy will adapt rigorous measures to ensure the radiation health and safety of both patient and operator. This includes limiting the examination to the area of clinical complaint, along with the application of appropriate radiation protective devices inclusive of, but not limited to, lead gowning and filtration.

Prior to the individual or institutional utilization of Spinal Videofluoroscopy, the operator(s) of the Spinal Videofluoroscopy equipment shall be adequately prepared by didactic training and practical experience to assure competency of application, and interpretation of both the technical and professional component of Spinal Videofluoroscopy.