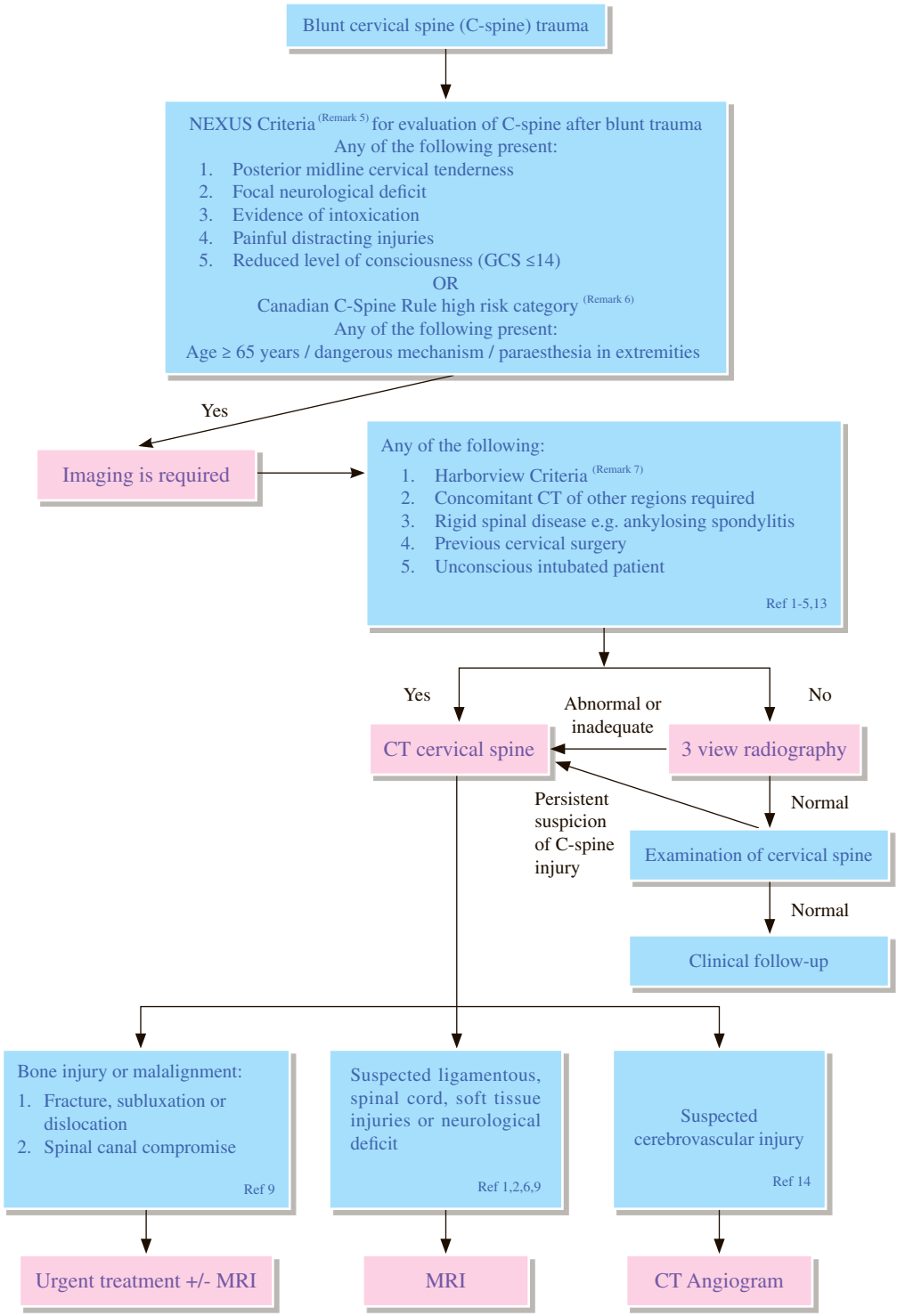
NR 2 Blunt cervical spine trauma



REMARKS

1 General

1.1 The imaging pathways in the algorithm are not mutually exclusive with each other and the use of the pathway should be guided by clinical suspicion.

2 Plain radiograph

2.1 Anteroposterior, lateral and open mouth views of the cervical spine are the basic views. It is essential that all seven cervical vertebrae are visualized including the cervicothoracic junction and the craniocervical junction.

2.2 Flexion-extension radiography is not useful in the acute injury period because of muscle spasm.[6]

2.3 It has advantages of lower radiation dose than CT which is important in younger patients.[7] It is cheaper than CT, but cost-effectiveness must take into account the massive costs associated with even one missed fracture that results in spinal cord injury.[7,8]

2.4 These limitations and the potential morbidity associated with missed fractures have led to a change in recommendations in preference to CT.[1,8]

3 CT

3.1 CT with multiplanar reformats is highly sensitive and specific and superior to radiography in the detection of cervical spine injury in both alert and obtunded patients, or in patients who cannot be evaluated with plain radiography.[9,10]

3.2 Useful in evaluation of bony displacement and in pre-operative planning.[11]

4 MRI

4.1 Imaging modality of choice for evaluating ligamentous, spinal cord and soft tissue injuries, or for patients with neurological deficits not explained by plain film or CT findings, and for patients with injuries requiring posterior stabilization so as to exclude concomitant disc herniations that might alter the surgical approach.[12]

4.2 In trauma patients with ankylosing spondylitis, routine CT and MR imaging is recommended, even after minor trauma.[13]

5 National Emergency X-Radiography Utilization Study (NEXUS) Criteria

5.1 Any of the following

5.1.1 Posterior midline cervical tenderness

5.1.2 Focal neurological deficits

5.1.3 Evidence of intoxication

5.1.4 Painful distracting injuries

5.1.5 Reduced level of consciousness (GCS ≤14)

6 Canadian C-Spine Rule

6.1 High-risk factors that mandate radiography: age ≥ 65 years, dangerous mechanism (i.e. fall from ≥1 metre / 5 stairs; axial load to head e.g. diving; high speed (>100 km/h) motor vehicle collision; motorized recreational vehicles; bicycle collision), or paraesthesia in extremities.

7 Harborview Criteria

7.1 Any of the following:

- 7.1.1 Presence of significant head injury
- 7.1.2 Presence of focal neurological deficit
- 7.1.3 Presence of pelvic or multiple extremity fractures
- 7.1.4 Combined impact of accident >50km/h
- 7.1.5 Death at the scene of the motor vehicle accident
- 7.1.6 Accident involved a fall from a height of 3m or more

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