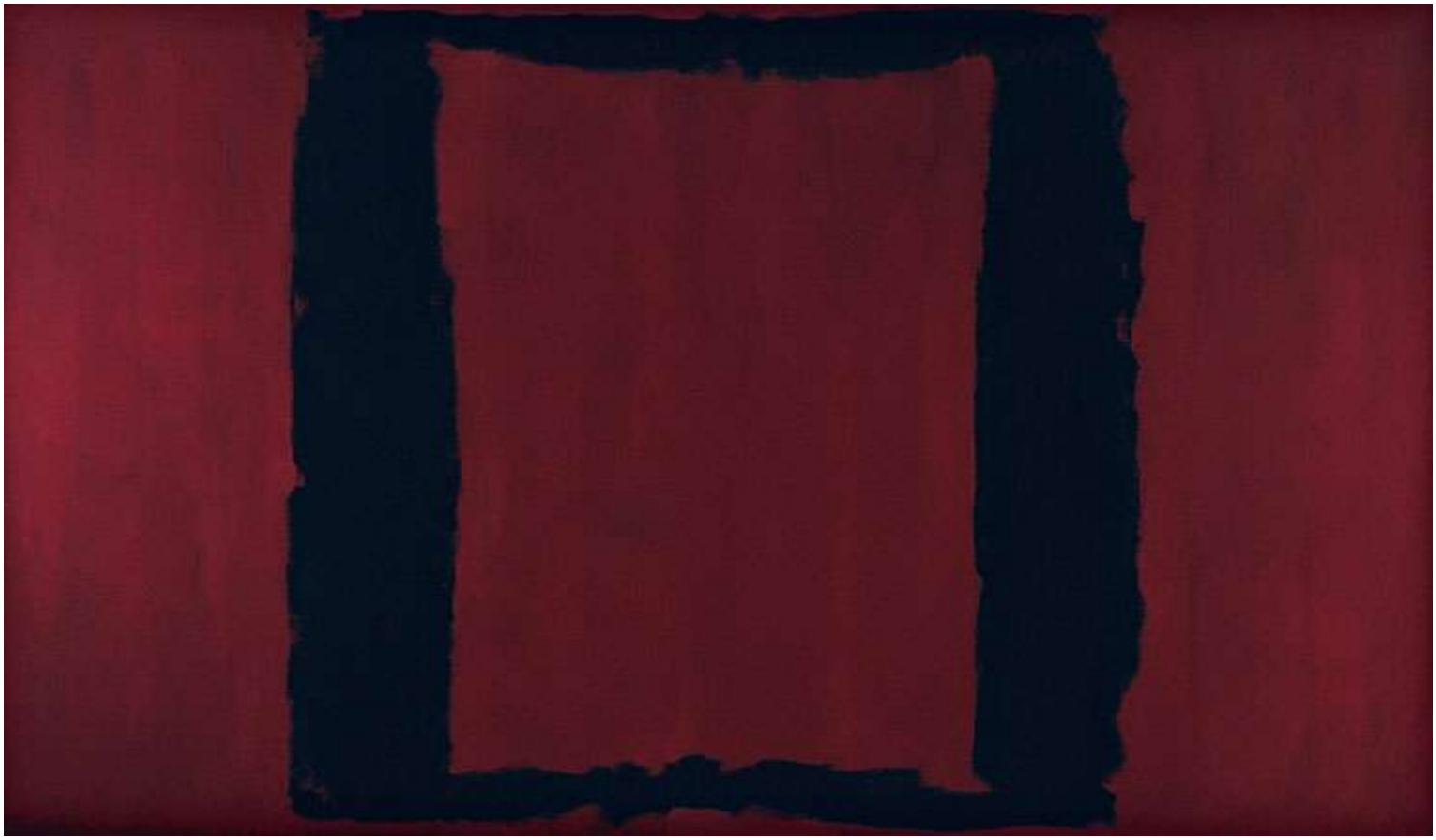
THE NORTHERN HOSPITAL

CLEARING THE CERVICAL SPINE IN TRAUMA



Black on Maroon, Mural, (Section 3), oil on canvas, 1959 from The Seagram Murals, Tate Gallery London.

So you see I got it all wrong that morning in 1970.

I thought seeing the Seagram paintings would be like a trip to the cemetery of abstraction, all dutiful reverence, a dead end.

Look at this one. What do you see?

A hanging veil suspended between two columns. On opening that beckons or denies entrance. A blind window. For me it's a gateway. If some of those portals are blocked, others open into the unknown space that Rothko talked about, the place that only art can take us, far away from the buzzing static of the moment and towards the music of the spheres. Everything Rothko did to these paintings, the column-like forms, suggested rather than drawn, the loose stainings were all meant to make the surface ambiguous, porous, perhaps softly penetrable, a space that might be where we came from or where we will end up. They're meant not to keep us out but to embrace, from an artist whose highest compliment was to call you a human being. Can anything be less cool than this room in the heart of Tate modern, further away from the razzle

dazzle of contemporary art, the hustle of now? This isn't about now, this is about forever. This is a place where you come to sit in the low light

Can art ever be more complete, more powerful - I don't think so.

Simon Schama, The Power of Art, BBC Television, 2010.

In many of Rothko's enigmatic works, the magisterial Art and History commentator, Simon Schama sees in them - as do many others - something of the eternal of the human condition. The lesson we learn from many of Rothko's works is not to be distracted by the "buzzing static of the moment"! - we must learn to see the bigger picture of life, and to "feel the eons rolling by, to be taken towards the gates that open onto the thresholds of eternity. To feel the poignancy of our comings and goings, our entrances and our exits, our births and our deaths, womb, tomb, and everything in between".

When we assess our patients with serious multiple trauma, we must be wary of the "buzzing static of the moment" - painful injuries may distract the patient's (and our own) attention from a potentially more serious bigger picture - that of a cervical spine injury! Can this message be ever more complete? - ever more powerful?

"Black on Maroon", Seagram Mural, oil on canvas, 1959, Tate Gallery London.

CLEARING THE CERVICAL SPINE IN TRAUMA

Introduction

Spinal clearance is said to have occurred when the relevant clinicians have examined the patient physically and radiographically and have determined that no significant injury exists, at which point, immobilization procedures are ceased. [1]

Spinal clearance should occur within **72 hours** post admission in order to reduce the incidence of complications of prolonged immobilization. [1]

The optimal imaging protocol for clearing of the cervical spine remains somewhat controversial, however most current expert opinion now favors **CT scan** in all situations as plain radiographs have been shown to have far lower sensitivity and specificity compared to CT scanning. Additionally radiation doses are fairly similar for a CT scan and traditional *multiple view* plain radiographic series.

Assessing the need for cervical spine x-rays in cases of trauma

In general terms: the "NEXUS" criteria for low risk injuries include:

- Absence of midline tenderness.
- Normal level of alertness.
- No evidence of intoxication/drugs.
- No evidence or history of neurological signs.
- No painful distracting injuries.

The Canadian C-spine rules also include the following "high risk" factors:

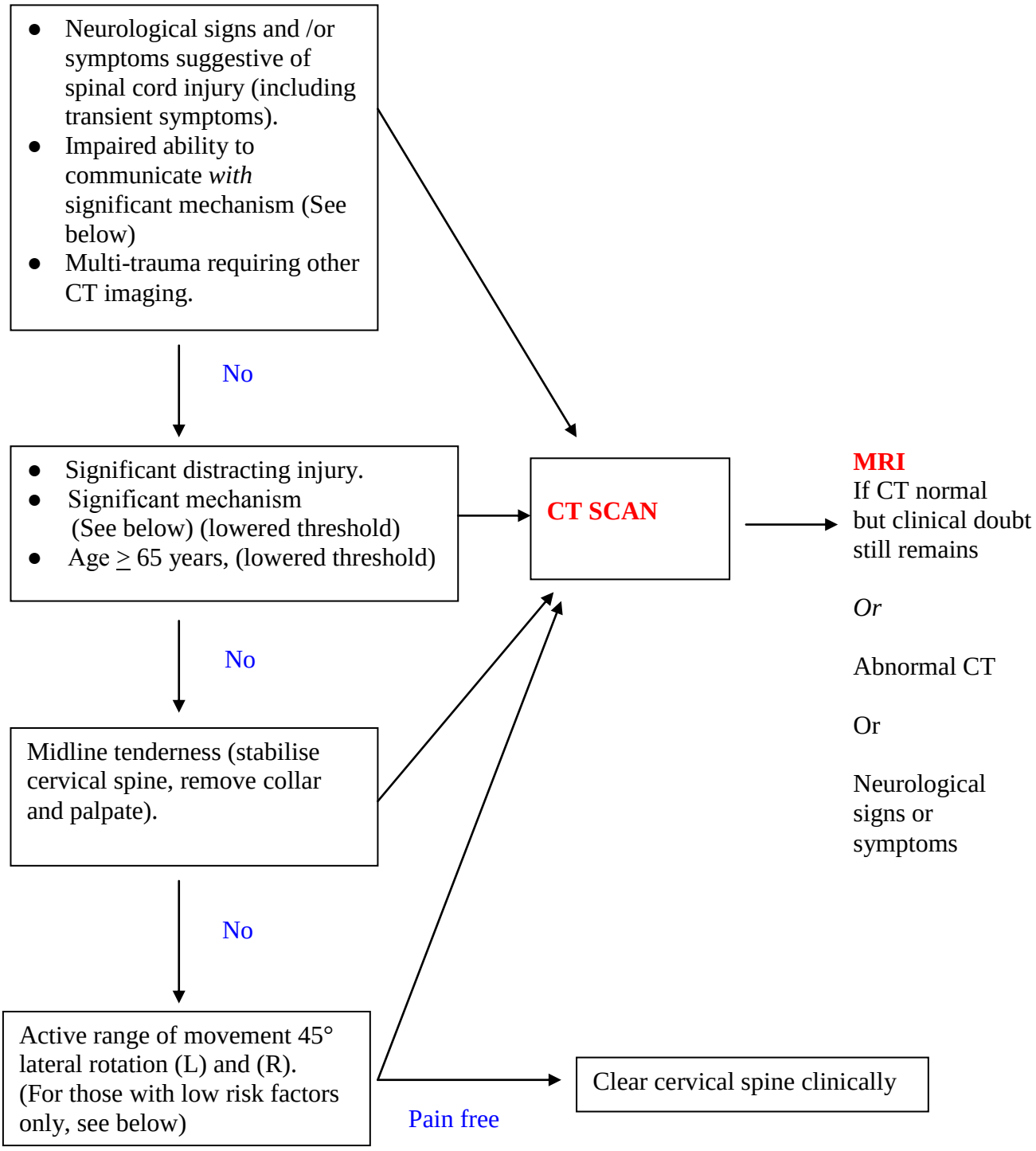
- Age $\geq$ 65 years.
- **Significant mechanism.**
- Numbness or tingling present in the extremities.

Additionally the following will also need to be considered: [1]

- Pre-existing spinal abnormality, (such as ankylosing spondylitis or extensive spinal degenerative disease).
- Whether or not opioid analgesia has been given and the possibility that this may obscure the clinical findings.

If **all** the above criteria are satisfied/ ruled out, then a cervical spine x-ray will not be nessessary.

Cervical Spine Imaging Pathway



Once the decision is made to proceed to CT scan there is no indication to do plain cervical spine x- rays.

Explanatory Notes

Impaired ability to communicate

Scenarios here may include:

1. Altered conscious state (ie. GCS < 15)
2. Intubated patients
3. Drug / alcohol affected.
4. Intellectual impairment (consider).
5. Language barrier (consider).
6. Psychiatric disorder (consider).
7. Opioid analgesia has been given, (within previous 4 hours).

Significant mechanism (Canadian C-Spine rules)

Examples of significant mechanisms of injury include:

1. Fall > 1 metre (or 5 steps).
2. Axial load to the head (eg. diving).
3. Motor vehicle mechanisms, involving:
    - High speed MCA (> 60 km/hr)
    - Ejection
    - Rollover
    - Any motorized recreational vehicle
    - A bicycle collision

    The following should also be considered:

    - Pedestrian struck by motor vehicle.
    - Significant damage to vehicle.
    - Death of another person

Low risk factors which will allow for active neck rotation examination (Canadian C-Spine rules)

1. Simple rear end MCA

- This does **not** include, pushed into oncoming traffic, struck by a large vehicle (bus/truck), rollovers, or high speed vehicles.

2. There is a delayed onset of neck pain.

3. Patient is ambulant.

Distracting Injuries

No precise definition for distracting injury is possible, and so experienced clinician judgment will be required.

It may include any condition thought by the clinician to be producing pain that is sufficient to distract the patient from a coexisting neck injury.

Examples may include, but are not limited to, the following:

- Any long bone fracture.
- Visceral injury requiring surgical consultation.
- Extensive laceration, degloving injury, or crush injury.
- Significant burns.
- Any injury producing acute functional impairment.

Physicians may also classify *any other* injury as distracting if it is thought to have the potential to impair the patient's ability to appreciate other injuries.

Indications for MRI

MRI is not currently considered to be the first line imaging investigation for a cervical spine injury, however it does have an important role in the assessment of these patients:

Indications for MRI include:

- Neurological signs and/ or symptoms.
- Abnormality on CT scan.
- Clinical doubt remaining despite a normal CT scan.

References:

1. The Alfred Spinal Clearance Management Protocol, Helen Ackland, November 2009.

2. Hoffman JR Wolfson AB et al. Selective Cervical Spine Radiography in blunt trauma methodology of the National Emergency X-radiography Utilization Study (NEXUS). Ann Emerg Med 1998:32: 461-469.

3. Stiell IG et al. The Canadian C-spine rule for Radiography in Alert & Stable Trauma Patients: JAMA Oct 17 2001, Vol. 286, No (15), 1841.

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