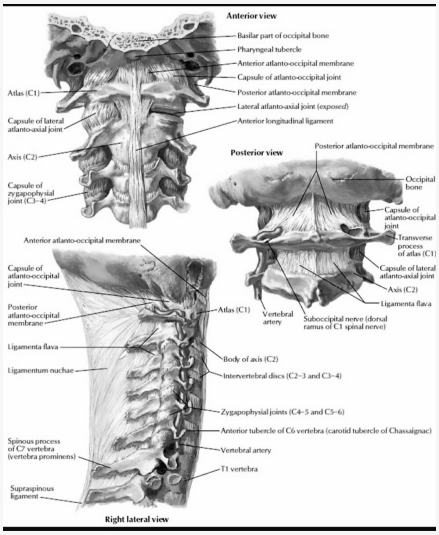
Ligaments of the neck



- Ligaments are the primary static stabilisers
- Limit end range of motion

Muscles a

Act as dynamic stabilisers

See cheat sheet muscles of the neck

Strains occur due to eccentric muscle contraction due to unexpected external force

- SCM, traps, IS , scalene, paraspinals mainly affected

Fast twitch muscles are more likely to be strained than slow twitch

Athletes - football, ice hockey, wrestling, skiing most affected. Whiplash injuries

Blow to the head when the head is moving forward

Pushing, pulling, moving heavy objects, falls

Prolonged postures, sedentary lifestyle,poor bra support , repetitive movements, pregnancy, obesity weakened CX musculature (deep neck flexors)

More common in females

Children and adults both suspectable to CX sprain/strain
children due to ligamentous laxity and immature facets/unicinate
adults due to tissue being less elastic

Presentation

Pain occurs hours/days after injury

Dull neck pain that becomes sharp with movement

Relieved by rest

Pain in CX , traps or interscapular regions but can refer to anterior neck and upper arm

Suboccipital headaches usually occur

Upper CX facets involvement can cause vertigo and headaches

Presentation (cont)
Facial injury = extension (SCM, Longus rectus, spinal erectors, solenoid or semispinalis) rotation/lateral flexion injury= levator, scalene, SCM, traps, solenoid
Poorly localised pain, swelling
Loss of ROM
Pain on end range =ligaments
Pain on resisted = musculature
Paraspinal spasm
Upper crossed features.
Neck flexion test, DNF endurance, foraminal compression, cervical distraction
If significant trauma, consider Canadian c spine rules. Consider head injury and CX instability
Neurological exam unremarkable if neuro findings, consider instability or disc lesion

Red flags
Radiograph/further investigation needed if
Dangerous mechanism.of injury
>65 years of age
Radiating neuro s&s
Midline CX tenderness
Loss of ROM (>50%)
HX of cancer
Bone disease
Systemic disease
Inflammatory arthropathy
Steroid use
Immunosupression
Fever
CX surgery
Suspected congenital defects or instability
Severe, unusual or prolonged pain
EDS/Marfan's/down syndrome
Neck gets stuck or locked with movement

Ddx

F#

Infection

Disc lesion

Arterial dissection

Neoplasm

Meningitis

Myofascial pain syndrome

Management

Ice

Electrical stimulation

US

NSAIDs (if relevant)

ROM exercises

Isometric strengthening

Myofascial release and stretching of scalene, levator, pecs, scm and paraspinal muscles

Nerve mobilisation

Avoid SMT

CT SMT may be more appropriate

Then stabilisation

DNF exercises

Upper crossed postural training to prevent further injury

Lx spine Strain/sprain

Mainly at L4-L5 & L5-S1

Posterior ligaments most affected

Strains = eccentric muscle contraction from excessive/unexpected force

Fall, twist, lift, push, pull, direct blow, straightening from prolonged seated/crouched

Can lead to muscle fatigue, inflammation and microtearing

Instability = chronic overloading and dysfunction
Cycle of: Dysfunction, stiffness and abnormal coupling

Risk Factors

Prolonged static postures

Repetitive movements

Improper lifting

Sedentary lifestyles

Poor conditioning (muscular imbalance = weak lx paraspinals and hip abductors , tightness in hip flexors and hamstrings

Risk Factors (cont)

Pregnancy

Obesity

Movements that decrease lx lordosis

Sustained flex causes ligamentous laxity (creep) lasts >30 minutes

More susceptible in the morning

Presentation

Pain begins gradually in hours/days following an injury (can occur abruptly)

Poorly localised, constant dull pain

Aggravated by movement (flexing, bending, twisting or lifting becomes sharp)

Relieved by rest (can cause stiffness)

Can refer into the thigh, buttock

Muscular spasm common

Swelling & loss of ROM - pain on end range PROM = ligament
Pain on RROM = muscular

SP tenderness

Paraspinal hypertonicity

Altered Intersegmental mobility

Assess for directional preference

+ve Slump, +ve PA shear +ve Kemps +ve Yeoman

Neurological exam unremarkable

VAS
ROBDI
RMBDI
RAND 36
BDQ

Imaging

Not usually unless red flags:

Rule out f# (dangerous mechanism of injury)

Significant degeneration

Hx of cancer

Bone/systemic disease

Inflammatory arthropathy

Steroid use

Immunosupression

Fever

Prior spinal surgery

Patients who do not respond to conservative care

DDx
Segmental joint dysfunction
Disc lesion
Facet syndrome
OA
Rheumatologic disease
F#/compression F#
Neoplasm
Infection
Spondylolysis
SI Dysfunction
Stenosis

Management
Ice/Heat (Ice for first 72 hours)
Electrical stimulation
US
NSAIDs
Gentle ROM exercises
Isometric strengthening
SMT of Lx and SI (6-12 sessions over 2-4 weeks)
Myofascial release/stretching of Lx erectors, QL, Gluteal muscles, Hamstrings, hip flexors/psoas, hip abductors
Nerve mobilisation
Postural advice, sleep advice, proper lifting mechanics
Avoid repetitive bending, twisting, lifting especially in the morning
Encourage to remain active
Take breaks from workstation for 10secs every 20 mins
Lumbar support cushion
Brugger's relief