Cervical Spine Pathology

More than just a pain in the neck

Brief Review of Common Pathologies

- Migraine Headaches
- Acute Torticollis / Wry Neck
- Cervical Spondylosis
- Cervical Arthrosis
- The Rheumatoid Neck

Quote from G. Grieve

If taught only in textbook syndromes, the unimaginative tyro begins to think only in syndromes, and may eventually reach the stage where a supposed confidence, in ability to retain flexibility of approach, becomes slowly and inexorably misplaced as hardening of unexamined ideas and concepts proceeds unwittingly almost to the stage of fossilization.

Cervicogenic Headache

- Pain referred to the head from the neck
- Often neck trauma precedes headache
- Typical symptoms include boring, burning, throbbing feeling of pressure, pounding, thundering, gnawing, sickening, fullness, nausea, vomiting, sinus congestion, visual disturbances and auditory disturbances.

Edelings Classification of Headache

- Non-recurring headaches
- Recurring or chronic headaches
  - Vascular headaches of migraine nature
  - Headache of cervical spondylosis (articular)
  - Combination of the above
Differential Assessment of Vascular Migraine and Cervical Articular Headache

**AREA:**
- Not a reliable criterion for differentiation
- Cervical headaches occur in many patterns and in different areas – not localized

There may be some common themes observed though:
- Tight band compressing the skull is common in cervical headache
- Pain settling behind (or arising) from one eye may often be cervical

**Nature of Pain**
- Not a reliable feature for differentiation

- Cervical headaches commonly present with many pain characteristics:
  - Boring
  - Throbbing
  - Burning
  - Pressure feeling

**Frequency**
- Normal headaches are usually
  - Infrequent
  - Low intensity
  - Completely relieved by simple analgesia

- Cervical headaches are usually
  - Frequent (continuous)
  - High intensity
  - Not relieved by analgesia

- Migraine has irregular frequency patterns

**Intensity**
- Cervical headache can be as painful as migraine

- Usually however a migraine type headache is scored higher on a VAS type scale

**Response to Analgesia**
- Analgesics become ineffective at some point with cervical headache

- As treatment becomes effective, response to analgesia improves

- Migraines respond minimally to compound analgesics and not at all to simple ones

**Attacks or Episodes**
- Migraines are described as spontaneous attacks – time of month, day, year

- Unusual for cervical headaches to occur like that

- As the cervical lesion progresses pain may be more easily provoked by less potent situations
Onset and Source
- This can be diagnostic
- Onset of migraine may be associated with the onset of puberty
- Cervical headache is not
- Pain/frequency patterns increase gradually over time or after sudden trauma
- May have periods of remission, but untreated it does not abate with time

Etiology
- Migraine linked to childhood motion sickness
- Linked to allergies
- May have a familial element
- These are also true of cervical headaches

Diagnosis
- Late post-traumatic cervical headache may not be diagnosed because:
  - Initial injury is forgotten
  - Radiology is unhelpful – fail to show O-A-A joints as problematic (usual source)
  - Confusion of symptoms suggests other diagnosis
  - Neurological tests are negative
  - Treatment of spondylosis is ineffective because it is non-specific

Diagnosis
- Cervical headache is articular and not muscular
- Migraine is a painful dilation of cranial blood vessels

Migraine Headaches
- Decide whether it is vascular or not in cause
- Unilateral Occipitofrontal headache caused by craniovertebral joint problems
- Relief is brought about by mobilization
- Not a true migraine - ‘my migraine’

Migraine Headaches
- Classical migraine occurs in about 10% of ‘migraine’ patients
- ? Decreased serotonin causing decreased tone of cranial arteries
- Important to understand the meningeal branches of spinal nerves of C1, 2, 3.
- Many headaches can be attributed to Cervical dysfunction
Classification of Vascular Headaches

- Classical Migraine - transient visual problems
- Common migraine - no focal aura - 'sick headache'
- Cluster headache - cyclic groupings of headache lasting 30-60 minutes each

Classification of Vascular Headaches

- Hemiplegic migraine and ophthalmoplegic migraine - motor and sensory phenomenon persist during pain
- Lower face headache - possibly of vascular origin

Classification of Muscle Contraction Headache

- Commonly bilateral
- Associated with contraction of skeletal muscle
- Tension headache
- Commonly misdiagnosed

Classification of Muscle Contraction Headache

- Unilateral joint pain in cervical spine
- Segment between C2-7 (usually C2-3)
- Painful on rising in the morning
- Posture of flexion and side-flexion away from the painful side
- May be associated rotation
- Severe muscle spasm

Available Movements

- Full elevation of painful side arm is not possible and painful
- Movements towards the pain are painful
- Full extension is impossible
- Pain comes in short sharp jabs
- Early in day the pain is localised but this spreads to a general ache as the day progresses

Causes of Torticollis

- Prolonged stretch in the painful posture causing irritation to the synovium lining
- Edema of the tight joint structures at C2-3 level
- Slow shift of cervical disc substance
- C2-3 may be involved more often because it is the first mobility segment with an intervertebral disc
Treatment of Torticollis
- Localized mobilizations and support
- Pain usually decreases within 24 hours
- Some may not clear up for 10 days or so
- Manipulation is not normally indicated and should be avoided for most cases

Cervical Spondylosis
- Very common - most people have it
- Usually affects the lower Cervical spine
- May be asymptomatic and not require treatment
- May be characterized by periodic episodes of pain
- Pain is related to position

Cervical Spondylosis
- Stiffness is episodic and variable over a period of weeks
- Usually there is no crepitus
- Nerve root and cord pressure is common, due to disc degeneration, osseo-cartilaginous bars, disc prolapse

Main Pathological Changes
- Primarily occurs in the disc and vertebral bodies
- Lipping and irregularities in the vertebral bodies occur
- Facet joints are approximated where discs are narrowed
- There are commonly obvious changes on X-ray

Cervical Arthrosis
- Less common than spondylosis
- Usually affects the upper cervical spine
- Almost always causes symptoms and requires treatment
- Usually never completely free from pain
- Posture makes little difference to pain
- Stiffness occurs daily and decreases after activity

Cervical Arthrosis
- Crepitus is common
- Sustained nerve root pressure is not common
- Root irritation may occur with certain movements
Main Pathological Changes

- The discs and vertebral bodies are normal
- Changes that occur are equal to other synovial joints
- Destruction of cartilage
- Loss of joint space
- Osteophyte formation - usually at the edges of the facet joints

The Rheumatoid Neck

- Involvement of cervical spine in RA occurs in 40% of RA patients
- A small proportion show serious instability
- Usually those with sero-positive disease, chronically raised ESR, nodular involvement and a history of steroid medication

Rheumatoid Neck

- Atlantoaxial subluxation reported in 25% of RA patients
- Positive subluxation is ranged by a separation of the atlas and axis by 3mm
- Clinical features may not be related directly to pathological changes
- Patients reporting pain in head and neck may have no neurological problems and vice versa

Management of the Rheumatoid Neck

- 'Physical treatment by movement has no place in the management of the rheumatoid cervical spine'
- Early treatment must be cautious due to risk of damage to the transverse ligament and the risk of odontoid peg fracture.

Any Questions?