History taking and physical examination in Myofascial Pain

Tool box approach

Simon Vulfsons

Rambam Institute for Pain Medicine
Case study #1

- 63 year old male
- Self employed all round handyman

- 5 months of pain in his lateral and posterior right knee
- The pain started after a day of heavy roofing work
- In the morning- the knee is stiff and very painful
- During the day- the knee eases up and functions well
- Flexion of the knee- causes severe pain
- No locking or swelling of the knee
- Analgesic medications (NSAIDs, Tramadol) - have not been helpful
- Visual Analogue Scale (VAS) for pain in the morning 7/10
- Visual Analogue Scale (VAS) for pain during the day 1-2/10

- The patient continues to work, climb ladders etc.
The Diagnostic Process - History

Onset

Quality

Radiation

Severity

Timing

Provoke

Palliate

How severe is your pain?

No pain

Worst pain imaginable

O
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Provoke, P
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Q
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Case #1 Physical examination

What are we looking for in the physical examination?
The Diagnostic Process - Examination

**Appearance, Asymmetry**

**Range of Motion**

**ARTN**

- Asymmetry
- Appearance
- Range of Motion
- Touch
- Tissue Texture Abnormality
- Neurology

**Touch, Tissue Texture Abnormality**

**Neurology**

**Range of Motion**

- Ankle Motion
- Dorsiflexion 20°
- Plantar Flexion 45°
The diagnostic process
a process of refinement

An analogy from the study of back pain

1. Local signs of disease, injury or structural damage?

2. Indications of systemic disorders?

3. Referred pain?
   a. Neurological
   b. Somatic referred

Adapted from Bogduk N, Pain 2009, 147:17-19
Focused Physical Examination

Pain generating tissue
Characteristics of Examination
- swelling
- redness
- heat
- pain
- loss of function

Pain emanating from tissue of nervous origin
Characteristics of Examination
- allodynia
- hyperesthesia
- hypoesthesia
- hyperalgesia

Somatic referred pain
Characteristics of Examination mainly in muscle
- taut bands
- trigger points
- limited range of motion
- pain reproduction pattern
Our Diagnostic Tool-box

Specific History
- Onset
- Provoke, Palliate
- Quality
- Radiation
- Severity
- Timing

General History

The Red Flags
- Presentation Age <20, >55
- Violent Trauma
- Constant non-mechanical pain
- Previous history
  - Cancer, Steroids, Drugs, HIV
- Systemically unwell
- Structural deformity,
- Widespread Neurology

Focused Examination
- Appearance
- Range of Motion
- Touch, Tenderness
- Neurology
63 year old male

**Specific history**
5 months of posterior-lateral knee pain
Worse in the morning
Easing during work hours
Severe during knee flexion

**Red flags and general history**
Nothing of clinical relevance

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**Knee pain with no knee findings?**

**Physical examination**
- Appearance: No swelling or deformity or redness
- Range of motion: Knee extension normal. Flexion to 70° due to severe knee pain
- Tissue texture and touch: No tenderness around knee structures, no local heat, muscle tenderness?
- Neurological examination: normal
On the definitions and physiology of local pain, referred pain, and neurological referred pain

**Nociceptive pain:** noxious stimulation of structures in the area of complaint

**Somatic referred pain:** noxious stimulation of structures can produce referred pain to or from the area of complaint

**Radicular and Neurological pain:** pain evoked by ectopic discharges emanating from a dorsal root, its’ ganglion or a peripheral nerve

**Radiculopathy:** neurological state in which conduction is blocked along a spinal nerve or its roots

Adapted from Bogduk N, Pain 2009, 147:17–19
What and where is the Pain Generating Tissue?
Myofascial Causes of Knee Pain

**Lateral Knee Pain**
Vastus Lateralis

**Posterior Knee Pain**
Gastrocnemius/Soleus
Hamstrings
Popliteus
Plantaris
The Myofascial tool box

Muscle Pain Patterns

Every muscle has a characteristic pain pattern

The pain pattern is revealed by careful history taking

Confirmation of specific muscle involvement is made by physical examination
The Myofascial tool box

Identify the muscles-surface anatomy

Palpate for tenderness-trigger points

Provocative testing
Myofascial Pain Definition

- Regional muscle pain syndrome accompanied by Trigger Points (TrP)
- TrP- hyperirritable spot within a taut band of skeletal muscle or muscle fascia
  - characteristic referral pain patterns
  - painful on compression
  - tenderness and autonomic phenomena
Back to our patient – Myofascial pain

63 year old male

**Specific history**
- 5 months of posterio-lateral knee pain
- Worse in the morning
- Easing during work hours
- Severe during knee flexion

**Red flags and general history**
- Nothing of clinical relevance

**Physical examination**
- Decreased range of motion - knee flexion
- No knee tenderness,
- Normal neurology

**Myofascial history**
- Severe pain in morning, eases during the day
- Radiates to lateral knee area.

**Physical examination**
- Tender trigger points in the right
- Vastus lateralis muscle

Myofascial Pain Syndrome
Rt Vastus Lateralis
Case study #2

60 year old female, teacher

**Specific history**
- 4 months ago low back pain radiating to left leg. Weak bladder.
- Hospitalized in orthopedics, IV steroids.
- CT L4-5 disc protrusion left side

**General history & red flags**
- No clinical relevance

**Physical examination**
- Normal neurology

**Myofascial history**
- Pain improved but cannot sleep on left side.
- Pain over left trochanteric area

**Physical examination**
- Tender trigger points (TrPs) in the left Gluteus minimus muscle

Lidocaine 0.5% injection into muscle TrPs completely eliminated the pain
The diagnostic process: a process of refinement

An analogy from the study of back pain

1. Local signs of disease, injury, or structural damage?
2. Indications of systemic disorders?
3. Referred pain?
   a. Neurological
   b. Somatic referred

Adapted from Bogduk N, Pain 2009, 147:17–19
The Musculoskeletal Tool Box

Local Signs of disease injury or structural defects:
- cancer
- infections
- infiltrations
- fractures
- deformities

Systemic disorders:
- arthropathies
- rheumatic

Nerve involvement:
- nerve root dysfunction
- peripheral nerve impingement
- neurogenic inflammation

Somatic Referred:
- Muscle
- Soft tissue
The Myofascial Tool Box

Specific history and pain patterns

**Trigger points**
- Tenderness
- Limited RoM
- Weakness
- Autonomic signs
Mechanism derived, anatomical-physiological, Pain Management

1. Anamnesis: define the scope of the problem
2. Physical Examination: refining the diagnosis
3. Assessment: The heart of the case
4. Plan: Implementation and follow-up
Good Clinical Medicine

1. Take a good history
2. Perform a good physical examination
3. Make your diagnosis and differential diagnosis
4. Decide on supplementary tests
5. Define your plan
   diagnostic
   therapeutic
What treatment?

Outcome

Treatment

Classification

Evaluation

The Pain Diagnostic Process

- Pain Anamnesis
  - Onset
  - Provoke, Palliate
  - Quality
  - Radiation
  - Severity
  - Timing

- SOAP Assessment
  - Subjective
  - Objective
  - Assessment
  - Plan

- Working hypothesis refinement
  - Red flags
  - Yellow flags

- Red flags
  - Asymmetry
  - Appearance
  - Range of Motion
  - Touch
  - Tissue Texture Abnormality

- Yellow flags
  - Neurology
  - Accessory Tests

- Plan
  - Therapeutic
  - Diagnostic

- ART-N-A
  - Assessment
    - Diagnosis
    - Differential diagnosis
# Diagnostic Pain Algorithm

## Subjective
- Onset of pain
- Palliative, Provocative factors
- Quality of the pain
- Radiation and localization
- Severity
- Timing

## Objective
- Appearance, Asymmetry
- Range of Motion
- Touch, Tissue Texture
- Neurological

## Assessment
- DDx, Diagnostic Tests, Discussion

## Plan
- Diagnostic
- Therapeutic
  - manual therapy
  - drug therapy
  - other intervention/s

## Active (screening)
- Passive
  - Intracapsular
  - Tissue barrier
- Resisted
  - Extra-capsular
  - Strength testing
  - End-Feel

## Layers
- Skin
- Subcutaneous
- Myofascial

## Isometric contraction
- Muscle Strength
- Sensory
- Tendon Reflexes