STYD02-19/20A: Pathology and Clinical Reasoning

GROUP PRESENTATION

BY

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Introduction

The Patient: a 40-year old triathlete in remission from skin cancer complaining of shoulder pain.

A Triathlon is an endurance event, consisting of swimming, cycling and running.

We will review:

- Prevalence and type of injuries in triathletes.
- Likely mechanism of injury (MOI).
- Likely pathology.
- Alternative possibilities caused from the cancer and/or the cancer treatment.

Prevalence of injuries in Triathletes

2013 26-week prospective cohort study of 174 participants.

- 56% reported overuse injuries.
- 20% impacted training volume/performance/complete inability to train/compete.
- Majority were overuse injuries
- Most prevalent sites were knee, lower leg, lower back + shoulder.

2018 retrospective study of 193 amateur triathletes.

- 12 months of training habits and competition.
- 86% of overuse injuries of the shoulder were thought to be primarily associated with swimming.

2012 retrospective study of 170 varsity-level competitive swimmers.

- 65% of all in season, gradual injuries reported were shoulder injuries.
- Gradual onset injuries were 2.7x more common than acute injuries.

Anderson et al. (2013), Schorn et al. (2018), Abgarov et al. (2012)

Swimmer's Shoulder

Presents as Subacromial impingement involving the Subacromial bursa, Bicipital tendon or Rotator Cuff tendon.

Symptoms
- Pain in the anterior lateral aspect of the shoulder.
- Pain in the subacromial region.
- Painful arc from 60-120 degrees.

Associated impairments
- Glenouhumeral instability/hypermobility
- Impaired posture – forward head/kyphosis.
- Impaired rotator cuff strength.

Tovin (2006)

Subacromial Bursitis

History	MOI	Evaluation Essentials	Key Findings	Diagnostic Evidence
Localized subacromial pain.	Chronic overuse injury.	Palpate structures in subacromial space.	Pain under acromion with shoulder testing is a key finding.	Neer's Test (sensitivity 72%, specificity 60%).
Painful arc of motion moving arm overhead.	Bursa may be inflamed secondary to trauma.	Special tests Neer's, Hawkins Kennedy.	Bursitis often produces a "crunchy" sound or sensation.	Hawkins Kennedy test (sensitivity 80%, specificity 56%).
Pain with general overhead activities.				

Winterstein and Clark (2015)

Primary Impingement Syndrome

History	MOI	Evaluation Essentials	Key Findings	Diagnostic Evidence
Anterior / Anterolateral shoulder pain.	Chronic MOI.	Evaluate Scapular mechanics and postural positioning.	Over 30's presenting with impingement may be hypomobile.	Empty can test (sensitivity up to 89%, specificity up to 82%).
Painful arc moving overhead from 60 degrees.	Repetitive overuse mechanism.	Empty Can, Neer's, Hawkins Kennedy.		Neer's Test (sensitivity 72%, specificity 60%).
Pain with general overhead activities.	Poor posture / scapular mechanics.			Hawkins Kennedy test (sensitivity 80%, specificity 56%).

Winterstein and Clark (2015)

Rotator Cuff Tendinopathy

History	MOI	Evaluation Essentials	Key Findings	Diagnostic Evidence
Anterior/lateral shoulder pain.	Chronic overuse mechanism.	Palpate rotator cuff tendons.	Pain at rest as tendinopathy progresses.	Empty can test (sensitivity up to 89%, specificity up to 82%).
Pain moving overhead > 60 degrees.	Poor posture and scapular mechanics are contributing factors.	Empty/Full can, Painful Arc (Supra) Gerber lift off (Subscap)	Rotator cuff weakness and GH instability.	Painful Arc (sensitivity 33% specificity 81%).
May have popping to cracking sounds.				Lift off test (sensitivity up to 62%, specificity up to 98%).

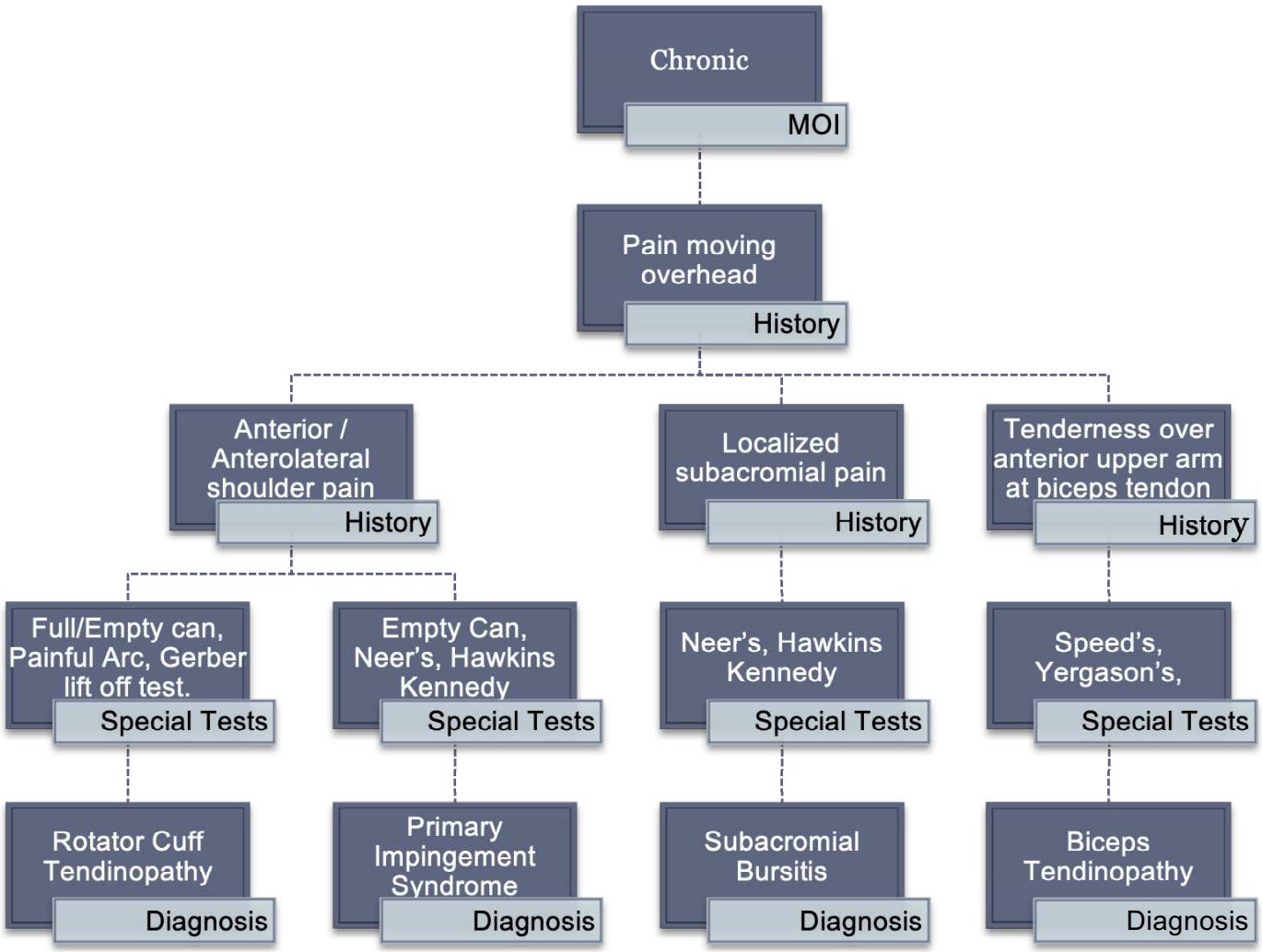
Calıs et al. (2000), Winterstein and Clark (2015)

Biceps Tendinopathy

History	MOI	Evaluation Essentials	Key Findings	Diagnostic Evidence
Tenderness over anterior upper arm at biceps tendon.	Chronic MOI.	Observe contour and tone of biceps for deformity.	Classically tender over long head of biceps in bicipital groove.	Speed's test (sensitivity 49% to 71%, specificity 60% to 85%).
Pain overhead and throwing motions.	Repetitive overhead activities.	Palpate for pain.	Pain worsens with overhead lifting or activity.	Yergason's test (sensitivity 14% to 75%, specificity 78% to 81%).
May report snapping in front of shoulder.		Speed's, Yergason's,	Night pain is common.	

Winterstein and Clark (2015)

Differential diagnosis



Winterstein and Clark (2015)

Types of skin cancer

Melanoma

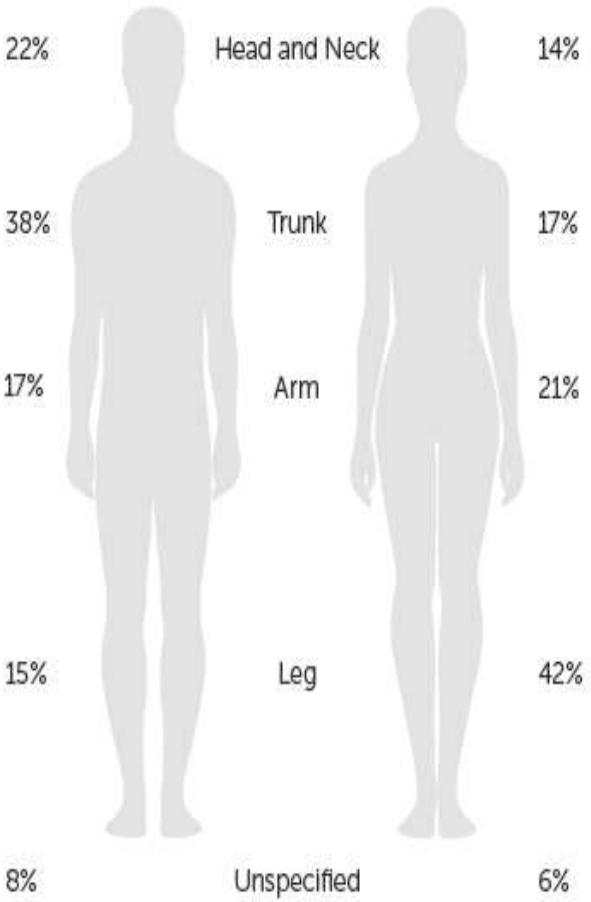
- 16,000 diagnosed each year (UK)
- 5th common cancer (UK) (excluding non-melanoma)
- 2nd commonest in adults < 50.
- Typically develops from an existing mole.

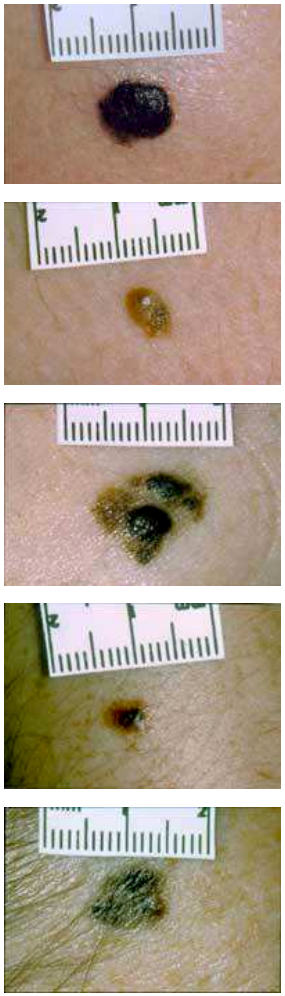
Non-Melanoma

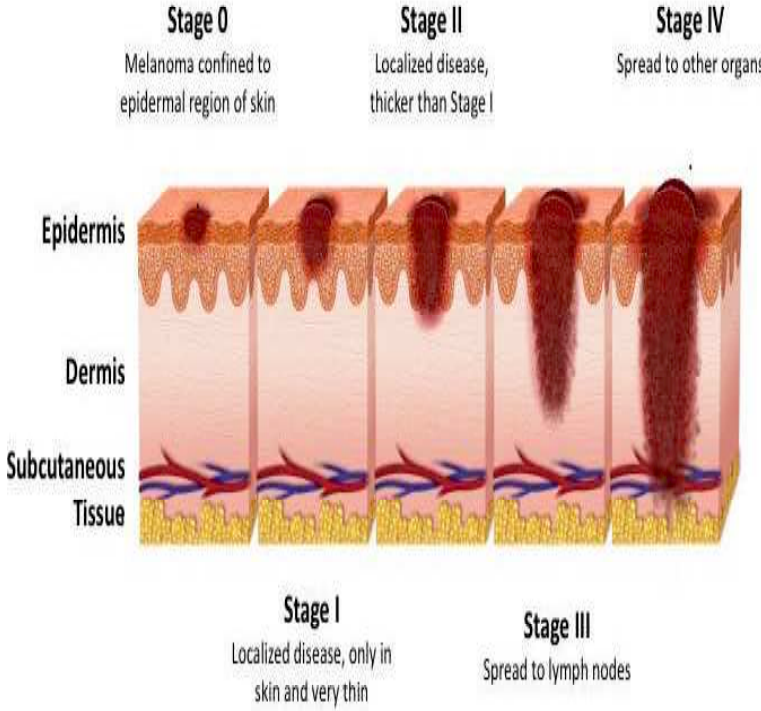
- 147,000 diagnosed each year (UK)
- Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC)
- Incidence rates highest in 90+
- BCC = 75% of all Non-Melanoma
- Existing mole / new mole / lesion that has recently appeared

Cancer Research UK (2019)

Presentation of skin cancer







Cancer Research UK (2019)

Treatment of skin cancer

- Main treatment is surgery
- Removes the cancer, usually only treatment needed.
- Skin graft may be required if it covers a larger area.

- Although rare, lymph node removal is a treatment if stage III+
- *Shoulder stiffness and pain* are the commonest problems when removed under the arms.
- Possible reduction in ROM post surgery.
- Discomfort / healing post op can take several weeks.
- Possible long lasting problems with pain after lymph node surgery.

Cancer Research UK (2019)

Red Flags

Later Stage Cancer

- Hard or swollen lymph nodes.
- Unexplained night pain.
- Hard lump on your skin.
- Feeling very unwell or tired.
- Unexplained weight loss.
- Jaundice
- Ascites

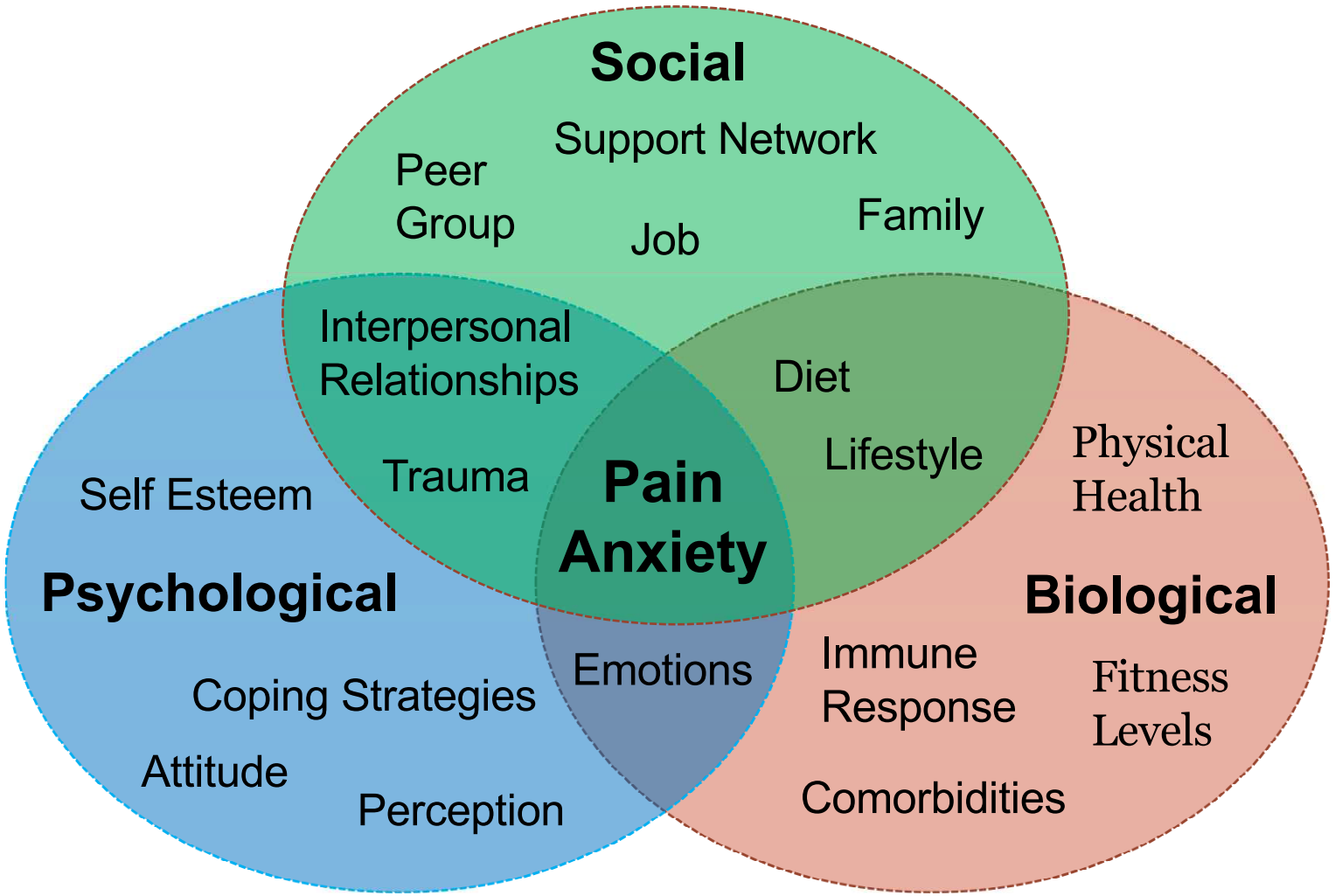
Local Recurrence

- Moles changing shape.
- Changing colour
- Loss of symmetry
- Itching or painful
- Bleeding or crusty
- Moles looking inflamed.

Refer to GP

Cancer Research UK (2019)

Yellow Flags



Adapted from Engel (1977)

Conclusion

40-year old triathlete in remission from skin cancer complaining of shoulder pain.

We conclude, based on the evidence that:

- Likely MOI is a chronic, overuse injury with a gradual onset.
- That swimming will be the potential cause and an aggravating activity.
- Type of injury is a subacromial impingement

Depending on the type/stage of skin cancer, and treatment, we also conclude that:

- At stage III, treatment may have been removal of lymph nodes.
- Shoulder pain is a common problem when nodes are removed under the arms.
- Lasting problems with pain after lymph node surgery is also possible.

Finally, biopsychosocial factors from the trauma of cancer should be considered.

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