Great Britain Rowing Team Guideline for Diagnosis and Management of Rib Stress Injury: Part 2
Rib Stress Injury: Guidelines for Diagnosis and Management

Definition: Rib stress injury is the development of pain due to bone oedema caused by overload along the bone shaft

Chest wall pain

Diagnostic features for rib stress injury (and clinical markers*)

History
- Insidious sudden onset or crescendo pain over a few days or weeks
- Pain on deep breathing*
- Pain on pushing/pulling doors*
- Difficulty rolling over in bed or sitting up from a lying position*
- Unable to sleep on affected side*
- Possible cough/sneeze pain*

Examination
- Tenderness commonly mid axillary line of chest wall
- Ribs 5-8 in particular
- Tender spot over oedema and sometimes palpable callous
- +ve spring/compression of ribcage (AP & lateral)*
- Pain with press up or resisted serratus anterior testing*
- Pain on initiating trunk flexion (sit up position including oblique bias)*

Severity of injury

Mild
- VAS score 2-3/10**
- Rib pain towards end of activity
- ‘Can row through it’
- ‘Tightness or soreness’
- Mild tenderness
- Compression test may be negative
- May only be stiff splinted rib cage without pain
- Often not all clinical markers* present

Moderate
- VAS score 4-6/10**
- Rib pain on movements
- Unable to complete training/racing
- Tender on palpation and compression test positive
- Most clinical markers* will be present

Severe
- VAS score 7-10/10**
- Rib pain at rest
- Painful on deep inspiration/coughing
- Pain on simple movements/lying/reaching
- Unable to train or race
- Compression test positive
- All clinical markers* likely to be present

Investigations: Usually CLINICAL DIAGNOSIS

Consider MRI or bone scan if unclear diagnosis. Bone oedema may be present beyond resolution of symptoms so imaging may be misleading

Management

Stage 1
- Offload rib – stop all rowing mechanics both in a boat and on the ergo
- Initiate pain free cross training
- Analgesia for comfort but not NSAIDs as impede recovery
- Consider taping for comfort
- Soft tissue work helpful to alleviate symptoms of protective mechanism
- Ultrasound/Laser treatment may shorten recovery period if available but not essential
- Gradual return to activity ensuring load kept low and under supervision
- Ensure resolution of all clinical markers*
- Time frame 3-6 weeks

Stage 2
- Biomechanical assessment by physiotherapist and coach
- Improvement of thoracic mobility and maintenance of mobility as load increases
- Assess rowing technique and correct to reduce areas of overload if possible
- Consider all intrinsic and extrinsic risk factors (see overleaf)
- Consider implementing prevention program

N.B. Stage 2 may be started early in rehabilitation process and does not necessarily require completion of stage 1

See overleaf for intrinsic and extrinsic risk factors for rib stress injury

The GB Rowing Team is the High Performance Arm of British Rowing
Rib Stress Injury: Risk Factors to Consider

**Intrinsic factors**
- Poor trunk/strength/endurance
- Poor trunk mobility/flexibility
- Concurrent shoulder pathology/injury
- Low back injury
- Previous rib injury
- Lightweight rower
- Female
- Reduced bone density
- Weight loss
- Relative Energy Deficiency in Sport (RED-S)

**Extrinsic factors**
- Rowing or erg at high load/low rate or over geared
- Rowing against strong wind/current
- Rapid increases in training load/volume/intensity
- Long steady state rowing
- Change from sweep to sculling and vice versa
- Change from rowing to ergo or vice versa
- Change from large to small boat
- Rigging over geared or too much height

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