ORTHOPAEDICS

FOR PRIMARY HEALTH CARE

LION
LEARNING INNOVATION VIA ORTHOPAEDIC NETWORKS

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Common soft tissue injuries

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Learning objectives

1. Classification of common soft tissue injuries.
2. Management of common soft tissue injuries.
3. Indications for referral and further investigation.

Background

Soft tissue injuries are very common, particularly in patients who are active and involved in sports but can also occur as a result of trauma or repetitive everyday activities. They can broadly be divided into two categories: acute and overuse injuries. The following lists common examples of each:

1. Acute soft tissue injuries (generally due to trauma, such as a sudden fall)
   a. Sprain
   b. Strain
   c. Contusions
2. Overuse injuries
   a. Tendinitis
   b. Bursitis

Acute injuries

Sprain

A sprain can be defined as a stretch, tear or both, in a ligament.

The most commonly affected joints are the ankles, wrists and knees (see the relevant chapters for more information, for example, ACL tears of the knee). Clinical features include pain of varying severity, bruising and inflammation (swelling, erythema, warmth).

Strain

A strain involves stretching, tearing or both, of the muscle, tendon or both. Contrastingly, these injuries typically affect the posterior thigh (hamstring), feet and back. Clinical features include pain, signs of inflammation and muscle spasm, weakness or cramping sensations.

Contusion

A contusion occurs due to a blunt force injury, which causes crushing of the underlying connective tissue and muscle and damage to local blood vessels. Management is supportive, as above.

Clinical evaluation

History

Acute trauma or sports injury. Pain, swelling and loss of function.

Examination

- Look: Swelling, bruising, deformity
- Feel: Warm inflamed joint, effusion
- Move: Limited range of motion (ROM)

Special tests

Refer to specific chapters Neurovascular examination.

Investigations

Plain X-rays: first-line (refer to Ottawa ankle rules).

Common overuse injuries

Tendinitis (acute)

Tendon inflammation as a result of repetitive micro trauma.

Tendinosis (chronic)

Tendon degeneration in response to overuse.

Bursitis

Bursitis is inflammation of the bursa. Bursae are fluid-filled sacs lined with synovium which reduce friction between adjacent tissues that slide past each other during normal movement (such as tendons, ligaments and bone). Clinical features of bursitis include pain (worsened with movement), swelling, erythema and decreased range of motion. Knowledge of anatomy is essential to identify the affected soft tissue structure. The sites of commonly affected bursae should be palpated to exclude bursitis in patients presenting with joint or limb pain.

Joint	Tendinosis	Bursitis
Shoulder	▪ Rotator cuff tendinopathy ▪ Biceps tendinitis/tendinosis	▪ Subacromial bursitis ▪ Scapulothoracic bursitis (medial scapula pain/winging scapula)
Elbow	▪ Lateral epicondylitis (tennis elbow) ▪ Medial epicondylitis (golfer's elbow)	▪ Olecranon (rule out gout and infections)
Knee	▪ Popliteus tendinopathy ▪ Iliotibial band syndrome ▪ Patellar tendinopathy	▪ Pre-patellar bursitis (rule out infection)
Ankle	▪ Achilles tendinopathy, Rupture	▪ Calcaneal and retrocalcaneal bursitis

Common overuse injuries

Management

- Assess and rule out serious injuries, limb-threatening injuries and complications, if present manage appropriately.
- Joint/immobilisation/splint.
- Ice packs
- Compression
- Limb elevation
- Analgesia and anti-inflammatory drugs
- Corticosteroids (oral and intra-articular injections

Indications for referral for special investigations or further management

Acute

- Excessive bleeding
- Expanding haematoma
- Joint effusion (for example, knee haemarthrosis)
- Excessive swelling or compartment syndrome
- Associated neurovascular deficits

Chronic

- Joint instability
- Loss of function
- Persistent pain or intermittent joint effusion
- Signs of infection (fever, effusion, sinuses)

References

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Assessment

An 18-year-old male presents with injury to his right knee following a tackle during a soccer match. He reports severe pain and loss of function. Clinical examination reveals massive knee effusion, bruising and reduced distal pulses. Plain x-rays are normal. Which of the following is the most appropriate action?

A. Splint the limb and observe overnight in the emergency unit.
B. Splint the limb, provide analgesia and discharge home.
C. Splint the limb, provide analgesia and emergency referral for special investigations and review by a specialist (vascular surgeon and orthopaedic surgeon).
D. Splint the limb and refer for specialist review at the next available clinic day.
E. Analgesia, intra-articular steroids and splint.

Option (C) is correct. The patient might have had knee dislocation, which is now reduced but presenting with signs of vascular injury and internal knee injuries requiring emergency treatment. Other options fail to recognize the urgency of his condition.

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ABOUT THE BOOK

Informed by experts: Most patients with orthopaedic pathology in low to middle-income countries are treated by non-specialists. This book was based on a modified Delphi consensus study* with experts from Africa, Europe, and North America to provide guidance to these health care workers. Knowledge topics, skills, and cases concerning orthopaedic trauma and infection were prioritised. Acute primary care for fractures and dislocations ranked high.

Furthermore, the diagnosis and the treatment of conditions not requiring specialist referral were prioritised.

* Held et al. Topics, Skills, and Cases for an Undergraduate Musculoskeletal Curriculum in Southern Africa: A Consensus from Local and International Experts. JBJS. 2020 Feb 5;102(3):e10.

THE LION

The Learning Innovation via Orthopaedic Network (LION) aims to improve learning and teaching in orthopaedics in Southern Africa and around the world. These authors have contributed the individual chapters and are mostly orthopaedic surgeons and trainees in Southern Africa who have experience with local orthopaedic pathology and treatment modalities but also in medical education of undergraduate students and primary care physicians. To centre this book around our students, iterative rounds of revising and updating the individual chapters are ongoing, to eliminate expert blind spots and create transformation of knowledge.

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The information in this book is meant to supplement, not replace, Orthopaedic primary care training. The authors, editor and publisher advise readers to take full responsibility for their safety and know their limits. Before practicing the skills described in this book, be sure that your equipment is well maintained, and do not take risks beyond your level of experience, aptitude, training, and comfort level.

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