



Chapter 117 – Tendinopathy & Bursitis

Episode Overview:

- 1) List 6 DDx for tendinopathy
- 2) List common sites for tendonitis
- 3) List 6 DDx for atraumatic nonseptic bursitis
- 4) What are the common causes of infected bursitis?

Wisecracks

1. Differentiate between features of septic and inflammatory bursitis, clinical and fluid findings
2. List 4 clinical exam findings in impingement syndrome

Key Points:

Tendinopathy

- **Mechanical overload** and **repetitive microtrauma** are key underlying mechanisms in the development of tendinopathy. Patients most often present with a history of progressively worsening localized pain after work- or sports-related activities that are repetitive in nature.
- Tendinopathy may also be associated with non-mechanical causes, including **systemic manifestations** of diseases, **infectious** etiologies, and the use of **fluoroquinolones**.
- Most patients with tendinopathy can initially be treated with conservative measures, such as protection, relative rest, application of ice, medications, and elevation. Overuse syndromes can take at least 6 to 12 weeks to heal. Inform patients of this, and provide an appropriate referral for follow-up.
- Emergent imaging is rarely indicated in the ED, although the use of bedside ultrasound to evaluate tendinopathy can help to identify tendon disruption/rupture.
- Operative treatment may be indicated for selected cases of tendon injury that require primary repair (eg, rupture of the Achilles tendon) or that have failed to respond to conservative treatment (eg, impingement syndrome) and are amenable to surgical amelioration.

Bursitis

- Consider the possibility of an **infectious cause in all cases** of acute bursitis.
- The definitive diagnosis of bursitis is made by aspiration of the bursa & evaluation of the fluid
- Septic bursitis is most commonly caused by **Staphylococcus aureus**.



- Nonseptic bursitis may be traumatic, rheumatologic (eg, gout and pseudogout), or idiopathic in nature. Other conditions, such as septic arthritis, osteomyelitis, and an underlying fracture, are in the differential diagnosis of bursitis.
- The management of bursitis includes:
 - ☐ Treatment with appropriate medication (antibiotics for septic bursitis, NSAIDs for non-septic bursitis)
 - ☐ RICE
 - ☐ Prompt referral for appropriate follow-up. Hospitalization is considered for severe local infections, for patients who are immunosuppressed, and in the presence of high fever or systemic toxicity

1) List 6 DDx for tendinopathy

Box 107.1

1. Tendon rupture
2. Ligamentous injury
3. Inflammatory arthritis (ex. rheumatoid)
4. Fractures (ex. avulsion)
5. Tumors
6. Tenosynovitis

2) List common sites for tendonitis

Refer to Figure 107.1

- Shoulder
 - Supraspinatus
- Biceps
 - Long head of biceps
- Elbow
 - Extensor tendons (tennis elbow)
- Ankle
 - Achilles
- Wrist
 - De quervian's
 - Flexor carpi ulnaris / other flexors



3) List 6 DDx for atraumatic nonseptic bursitis

Box 107.2

1. Rheumatoid arthritis
2. Pseudogout
3. Ankylosing spondylitis
4. Hypertrophic pulmonary osteoarthropathy
5. Oxalosis
6. Gout

4) What are the common causes of infected bursitis?

- ☐ Idiopathic : Most Common
- ☐ Infection (most often due to *Staphylococcus aureus*)
- ☐ Trauma (which may predispose to infection)
- ☐ Rheumatologic disorders (eg, gout, pseudogout, ankylosing spondylitis, and rheumatoid and psoriatic arthritis)
- ☐ Other systemic diseases (eg vasculitis)

Wisecracks

1) Differentiate between features of septic and inflammatory bursitis, clinical and fluid findings

Clinical features

Septic:

- ☐ Pain
- ☐ peribursal erythema
- ☐ Warmth
- ☐ Fever
- ☐ Tenderness
- ☐ *** Look for wound or abrasion overlying the involved bursa
- ☐ RF: diabetes, alcoholism, or immunosuppression

Septic vs Aseptic according to UptoDate:

- ☐ Tenderness (88 percent septic bursitis versus 36 percent aseptic bursitis)
- ☐ Erythema/cellulitis (83 percent septic bursitis versus 27 percent aseptic bursitis)
- ☐ Warmth (84 percent septic bursitis versus 56 percent aseptic bursitis)
- ☐ Report of trauma or evidence of a skin lesion (50 percent septic bursitis versus 25 percent aseptic bursitis)
- ☐ Fever (38 percent septic bursitis versus 0 percent aseptic bursitis)

Aspirate	Septic	Non-Septic
Appearance	Purulent / serosang	Straw colour / sero
Fluid-to-serum glucose ration	<50%	>> 50%
Gram Stain	positive	negative
Culture	positive	negative
WBC from aspirate	>5000/ μ L ³	<1000/ μ L ³

Septic:

- ☐ Purulent / serosang appearance of aspirate
- ☐ ***Bursal fluid glucose-to-serum ratio of less than 50% THINK SEPTIC***
- ☐ Gram stain & culture positive for organisms
- ☐ WBC from aspirate > 5000/ μ L³ HIGHLY SUGGESTIVE of septic bursitis, despite negative gram stain

*** Staph .aureus is by far the most common organism followed by other staphylococcal and streptococcal species***

2) List 4 clinical exam findings in impingement syndrome

Important to know the structures involved:

- ☐ Subacromial bursa
- ☐ Rotator cuff
- ☐ Biceps tendon
- ☐ Labrum

When it comes to looking for shoulder impingement syndrome (SIS), use the:

- ☐ Neer (Passive painful arc test)
- ☐ Hawkins-Kennedy (Flexion with internal rotation test)

Look for:

- Neck exam is within normal limits
- Tenderness present in the subacromial space or posterior shoulder
- Glenohumeral range of motion may be limited by pain (eg, positive painful arc)
- Reproduction of pain with specialty testing (eg, Neer, Hawkins-Kennedy, Yocum's)
- Atrophy of posterior shoulder musculature may be apparent with long-standing impingement