

# Anterior Thigh Pain

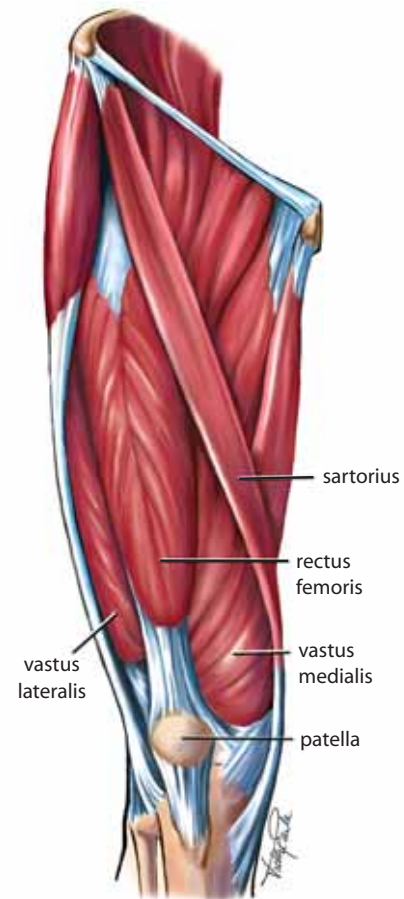
## CHAPTER 25

The anterior thigh (Fig. 25.1) is the site of common sporting injuries such as quadriceps muscle contusion and strain of the quadriceps muscle. Referred pain from the hip, sacroiliac joint (SIJ) or lumbar spine may also cause anterior thigh pain. Stress fracture of the femur is an uncommon, but important, diagnosis. The causes of anterior thigh pain are shown in Table 25.1.



**Figure 25.1** Anatomy of the anterior thigh

**(a)** Surface anatomy



**(b)** Muscles of the anterior thigh

**Table 25.1** Causes of anterior thigh pain

Common	Less common	Not to be missed
Quadriceps muscle contusion (cork thigh, charley horse)	Referred pain (upper lumbar spine, sacroiliac joint, hip joint)	Slipped capital femoral epiphysis
Quadriceps muscle strain (rectus femoris)	Stress fracture of the femur	Perthes' disease
Myositis ossificans	Sartorius muscle strain	Tumor (e.g. osteosarcoma of the femur)
	Gracilis strain	
	Avulsion of the apophysis of rectus femoris	

## Clinical approach

### History

The two most important aspects of the history of a patient with anterior thigh pain are the exact site of the pain and the mechanism of injury. The site of the pain is usually well localized in cases of contusion or muscle strain. Muscle strains occur in the mid belly. Contusions can occur anywhere in the quadriceps muscle but they are most common anterolaterally or in the vastus medialis obliquus.

The mechanism of injury may help differentiate between the two conditions. A contusion is likely to be the result of a direct blow, whereas a muscle strain usually occurs when an athlete is striving for extra speed running or extra distance kicking. In contact sports, however, the athlete may have difficulty recalling the exact mechanism of injury.

Whether the athlete was able to continue activity, the present level of function and the degree of swelling are all guides to the severity of the condition. Determine whether the RICE regimen was implemented initially and whether any aggravating factors, such as a hot shower, heat rub, excessive activity or alcohol ingestion were present. Gradual onset of poorly localized anterior thigh pain in a distance runner worsening with activity may indicate stress fracture of the femur. If the pain is variable and not clearly localized and if specific aggravating factors are lacking, consider referred pain. Bilateral pain suggests the pain is referred from the lumbar spine.

### Examination

In anterior thigh pain of acute onset, the diagnosis is usually straightforward and examination is confined primarily to local structures. In anterior thigh pain of insidious onset, diagnosis is more difficult. Examination should include sites that refer pain to the thigh, such as the lumbar spine, SIJ and hip.

The aim of the examination is to determine the exact site of the abnormality and to assess range of motion and muscle strength. Functional testing may be necessary to reproduce the symptoms.

1. Observation
  - (a) standing
  - (b) walking
  - (c) supine
2. Active movements
  - (a) hip flexion
  - (b) knee flexion
  - (c) knee extension
3. Passive movements
  - (a) hip and knee (e.g. hip quadrant)
  - (b) muscle stretch (e.g. quadriceps) (Fig. 25.2a)



**Figure 25.2** Examination of the patient with anterior thigh pain

(a) Passive movement—quadriceps stretch. A passive stretch of the quadriceps muscles is performed with full knee flexion. Passive hip extension may be added to increase the stretch on the rectus femoris, which may reproduce the patient's pain