# MYOSITIS OSSIFICANS

## Description

Myositis ossificans is the formation of bone in an area bruised by injury. This can occur in the arm or thigh. Myositis ossificans develops in 10% to 20% of thigh contusions. *Myositis* means inflammation of muscle, and *ossificans* means bone. A contusion to the arm or thigh causes bleeding, and a clot of blood (hematoma) forms, usually within the muscle. This hematoma then may become bone. This may occur in a person of any age and gender, although it most commonly occurs in young adult or teenage males.

## Common Signs and Symptoms

- Pain, tenderness, swelling, and warmth of the injured extremity
- Feeling of fullness deep in the injured extremity
- Discoloration and bruising of the skin
- Restricted activity (stiffness of the joints) of the injured extremity, including loss of motion of the knee (thigh) or elbow (arm), depending on the area injured

## Causes

The cause of myositis ossificans is unknown. It most commonly develops within a muscle that has sustained a severe contusion (bruise), usually from direct contact. The muscle is usually crushed between the underlying bone and an object (another player's helmet, a knee or elbow, or a ball).

## Risk Increases With

- Contact sports with or without pads, such as football, hockey, soccer, lacrosse, and field hockey
- Inadequate protection of exposed areas during contact sports
- Bleeding disorder (hemophilia), use of medications that can thin the blood (warfarin), or use of aspirin or nonsteroidal anti-inflammatory medications before the injury
- Poor nutrition, including vitamin deficiency

## Preventive Measures

- Wear appropriate protective equipment (such as arm or thigh pads) and ensure proper fit.
- If possible, limit the use of medications that affect bleeding before participating in contact sports.

## Expected Outcome

By 3 to 6 months the mass stabilizes, matures into bone, and may resolve partially. Most athletes with myositis ossificans can return to sports without surgery if there is full motion and strength of the affected extremity.

## Possible Complications

- Prolonged healing time if not appropriately treated or if not given adequate time to heal
- Recurrence of symptoms if activity is resumed too soon, with overuse, with a direct blow, or when using poor technique
- Persistent loss of motion of affected joint
- Weakness of the affected extremity

## General Treatment Considerations

Initial treatment consists of medication, ice, and bandages to relieve the pain and swelling. Further, stretching of the affected joint, maintaining strength or muscle control of the injured extremity, and modifying activity help restore function to the extremity. These may help reduce the incidence of myositis ossificans. These all can be carried out at home, although referral to a physical therapist or athletic trainer for further evaluation and treatment may be helpful. Crutches for thigh contusions may be recommended. A neoprene (wetsuit material) or other bandage may help reduce some of the symptoms. Rarely, aspiration (removal with a needle) of the clot (hematoma) may be recommended. Nonsteroidal anti-inflammatory medications may also reduce the formation of bone of the hematoma (clot). Most athletes with this problem can function well. Surgery to remove the bone of myositis ossificans is considered only if symptoms (pain) persist, loss of joint motion persists, or the bone is unusually large; it is done only after the bone is fully mature (at least 6 to 12 months after the injury).

## Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.

- Topical ointments may be of benefit.
- Pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need.

### Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

### Notify Our Office If

- Symptoms get worse or do not improve in 6 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

Notes: (Up to 4400 characters only)

Notes and suggestions