Myositis Ossificans

Myositis ossificans is a heterotopic ossification within muscle fascial planes seen typically in athletic individuals in their adolescence and early adult life. It occurs primarily in males and usually results from a significant injury to a muscle, such as a tearing of the quadriceps muscle (the most common location for this problem). It also occurs in the gluteus maximus and the brachialis muscle of the elbow. The calcification is typically noted on X-ray three to four weeks after the injury. It tends to occur at the periphery of the damaged muscle and there is usually a hematoma in the central area. As the lesion matures the calcific rim around the damaged muscle will appear as fairly mature bone and the central area will remain radiolucent, giving the so-called zonal pattern that is almost diagnostic of traumatic myositis ossificans. This is the opposite of osteosarcoma of soft tissue where the most dense portion of the calcifying lesion occurs centrally and the more lytic portion at the periphery of the lesion. Myositis ossificans can also occur in older patients with no history of trauma. In that case, the clinician becomes concerned about the possibility of a neoplasm such as synovial sarcoma or soft tissue osteosarcoma. Histologically the lesion will have the appearance of a healing fracture, including immature cartilage and bone formation, along with hematoma in the early stages. In rare cases, after a period of 25 or 30 years, these dormant lesions can reactivate and develop into a secondary osteosarcoma. Treatment usually consists of rest until the lesion matures (around six months), at which point the patient is usually asymptomatic. There is no reason to remove the lesion unless there is signiciant clinical disability related to stiffness of the adjacent joint.

The hereditary, congenital form of myositis ossificans referred to as myositis ossificans progressive or fibrodysplasia ossificans progressive, using the newer terminology, is seen typically in children under the age of ten years. It presents with a clinical picture of progressive fibroblastic proliferation and subsequent calcification and ossification of subcutaneous fat, muscles, tendons, appeneuroses, and ligaments. This condition can be associated with symmetrical malformations of the digits with microdactyly of the thumbs and great toes, sometimes with a failure of segmentation of these digital bony structures. The condition usually presents between birth and the first six years of age. It is inherited as an autosomal dominant trait. Males and females are affected equally and the calcification in soft tissues is usually precipitated by a local injury to the soft tissue. It occurs typically in the musculature of the back, shoulder, paravertebral region and upper arms. Fusion of the temperomandibular joint can occur. If the respiratory muscles are affected,

death in early adult life can result because of respiratory failure or pneumonia. The prognosis for survival is very poor and most patients die within the first ten to fifteen years of life. Biopsy or trauma of the affected areas should be avoided because new lesions might develop. There is no effective treatment for this condition.