Orthopedic Center
Hand and Orthopedic Upper Extremity Program
Enchondroma

What is an enchondroma?
Enchondromas are benign (non-cancerous) cartilage tumors seen frequently in arms and legs. Often located in the metaphysis of long tubular bones, enchondromas are the most common type of bone tumor in the hand.

What causes enchondroma?
The exact cause of an enchondroma is unknown, however, there are two theories. Most believe that enchondromas occur as a result of ectopic growth of the cartilage arising from the growth plate at the ends of the bones. Others believe that enchondromas arise from pockets of embryonic cartilage.

What are the symptoms of enchondroma?
While most enchondromas are asymptomatic, some individuals may experience pain in the affected area if any, or a combination of, the following occur:  
- the tumor becomes very large,  
- the tumor causes weakness of the affected bone, leading to a fracture,  
- the tumor causes abnormal growth of the affected area

Who is affected?
No clear risk factors are known. Patients of either gender and any racial background can be affected. In general, enchondromas present in adolescence or early adulthood.

Conditions associated with enchondromas
An enchondroma may present as a solitary tumor or with multiple areas of involvement. In cases that involve multiple tumors, the following conditions may be diagnosed:

- Ollier’s disease (a.k.a. enchondromatosis) -- Multiple enchondromas in various sites of the body. Less common than cases of single enchondroma.
- Maffucci’s syndrome -- Multiple enchondromas associated with soft tissue hemangiomas (benign tumors made up of blood vessels).

How are enchondromas diagnosed and treated?
Enchondromas are diagnosed by your physician after a thorough medical history and physical examination. In addition, the following diagnostic tests may also be performed: x-ray, bone scan, MRI, CT scan.

Treatment is individualized for each patient, taking into consideration the patient’s general health, medical history, and extent of the condition. In cases where there is no sign of bone weakness or continued tumor growth, the affected area may be observed with serial physical examinations and radiographs as determined by your treating physician.

In cases where there is pain, fractures, abnormal growth, or multiple tumors, surgery is recommended. Surgical treatment typically involves excising the enchondroma and using bone graft to facilitate healing in the area of the excision.