

Panner's Disease

INTRODUCTION

Panner's disease is a disorder of childhood in which the part of the growth cartilage near the elbow joint goes through a process of damage, collapse, and healing. It is not known why this process occurs, but it is likely due to the combination of too much force or too much activity on an area of soft bone. Fortunately, the process of healing is fairly reliable and outcomes are generally very good.



BACKGROUND

Panner's disease is a disorder of bone development known as an osteochondrosis. Normally, bones grow from cartilage growth centers or growth plates. In Panner's disease, the cartilage growth is disrupted. The cause is unknown, but it may be hereditary, due to small strains which add up over time (like repeatedly throwing a ball), or due to blockages in the tiny blood vessels. What is known is that some of cells are damaged and must go through a slow healing process. This process is sometimes called "avascular necrosis" or "osteonecrosis", but these terms should be reserved for adults who have less healing potential than children.

The capitellum is a specific location in the elbow, which is the junction between the humerus in the upper arm and radius and ulna in the forearm. The capitellum is the lower outer part of the humeral joint surface that articulates with the upper part of the radius. In Panner's disease, the capitellum becomes irregular and flattens out, but with time and growth, the damaged areas are replaced by the adjacent growing cells.



CLINICAL PRESENTATION AND DIAGNOSIS

Panner's disease generally affects the dominant elbow of children, mainly boys, between the ages of five and ten. The child begins to complain of pain during activity. The pain eases with rest. Over a period of one to two years, the bone slowly rebuilds itself. During this time, symptoms gradually disappear, although the elbow may never fully straighten out.

Symptoms usually come on without a specific cause, and usually without a specific event or injury to explain the symptoms. The child may report pain at the outside edge of

the elbow, near the capitellum. Pain is generally worse with activity and better with rest. The elbow often feels stiff and motion is limited. Symptoms can come and go, but generally go away gradually as the bones mature, usually over a period of one to two years. However, the condition may leave the child unable to fully straighten the elbow.



The doctor will check the elbow for swelling and motion and compare it to healthy elbow. X-rays are needed to confirm the diagnosis, and will show an irregular surface on the capitellum. The entire growth plate may appear fragmented and transparent. Transparent areas mean that the bone that makes up the capitellum has been absorbed. The appearance will change over a period of 1 to 2 years until the capitellum has completely grown back to its normal shape. Occasionally, a MRI is done for a more detailed view of the bone irregularities, the joint surface, and adjacent swelling.

TREATMENT

Panner's disease is generally treated symptomatically with a combination of rest or activity modification, pain medications, and possibly physical therapy. When painful, a cast or sling can help rest the arm for a few weeks so that inflammation and pain settle down. Anti-inflammatory medications and ice/heat can also be helpful. At other times, being out of gym and sports may be all that is needed. The key factor for treatment is the passage of time while the growth center heals itself. The symptoms of Panner's disease are usually done by the time the capitellum finishes growing. Surgery is not generally needed or beneficial for Panner's disease.

EXPECTED OUTCOMES AND COMPLICATIONS

Symptoms from Panner's disease tend to go away slowly over time. This means that nonsurgical rehabilitation doesn't really cure the problem. Treatments can only help by giving short-term relief from symptoms.

MORE INFORMATION

Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for expert and peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and the Pediatric Orthopedic Society of North America at www.orthokids.org.