Salter-Harris Type II Stress Fracture in a Young Athlete
A Case Report

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ABSTRACT: A Salter-Harris type II stress fracture of the distal femoral epiphysis is reported in a skeletally immature athlete.

Introduction
Over the past 10 years, there has been an apparent explosion in the number of people who exercise for general fitness. Running or jogging is often the form of exercise taken. In turn, orthopedic surgeons see more patients with running injuries than ever before.

The causes of knee pain in running sports vary from lower extremity and foot malalignment syndromes to stress fractures. However, there have been no reports of Salter-Harris type II stress fractures of the distal femur as a cause of knee pain in the skeletally immature athlete.

Case Report
A 15-year-old male competitive high school tennis player was seen 4 weeks after the onset of right knee pain. The season for high school interscholastic tennis had ended and the players were placed in a training program for cross-country running competition. The initial training began with a program of running 800 m five times consecutively, a total of 4 km, on an asphalt composition track. The boy’s knee pain began during the first attempt at this training regimen and he had to curtail his participation. No fall or direct trauma to the knee occurred in the intervening 4 weeks.
The initial examination revealed only diffuse tenderness about the knee joint with no effusion or ligamentous instability. X-rays were taken (Fig. 1, 2) which showed a Salter-Harris type II fracture extending obliquely from the lateral femoral metaphysis to the distal femoral epiphysis, already stabilized with external callus.

Treatment consisted of restriction of running and contact activities for 6 weeks at which time gradually increasing running activities were allowed. By 3 months the patient was able to participate in all phases of high school sports activities with no symptoms.

**Discussion**

Stress fractures as a cause of lower extremity disability in the athlete and in the military recruit are well documented. As a cause of knee pain, stress fracture of the medial tibial plateau is probably the most common site. Stress fractures in children are also well documented. However, documentation of a Salter-Harris stress fracture is thus far lacking. The difficulty of diagnosis of some Salter-Harris type II fractures following trauma is well shown by Moran and Dvorach. In this case, the diagnosis was obvious because of the 4 week delay which allowed external callus formation and bone resorption at the metaphyseal fracture line. However, it is important to bear in mind the possibility of an epiphyseal stress injury as a cause of knee disability in the immature running athlete.

**References**

4. Orava S, Puranen J, Ala-Ketola L: Stress fractures caused


