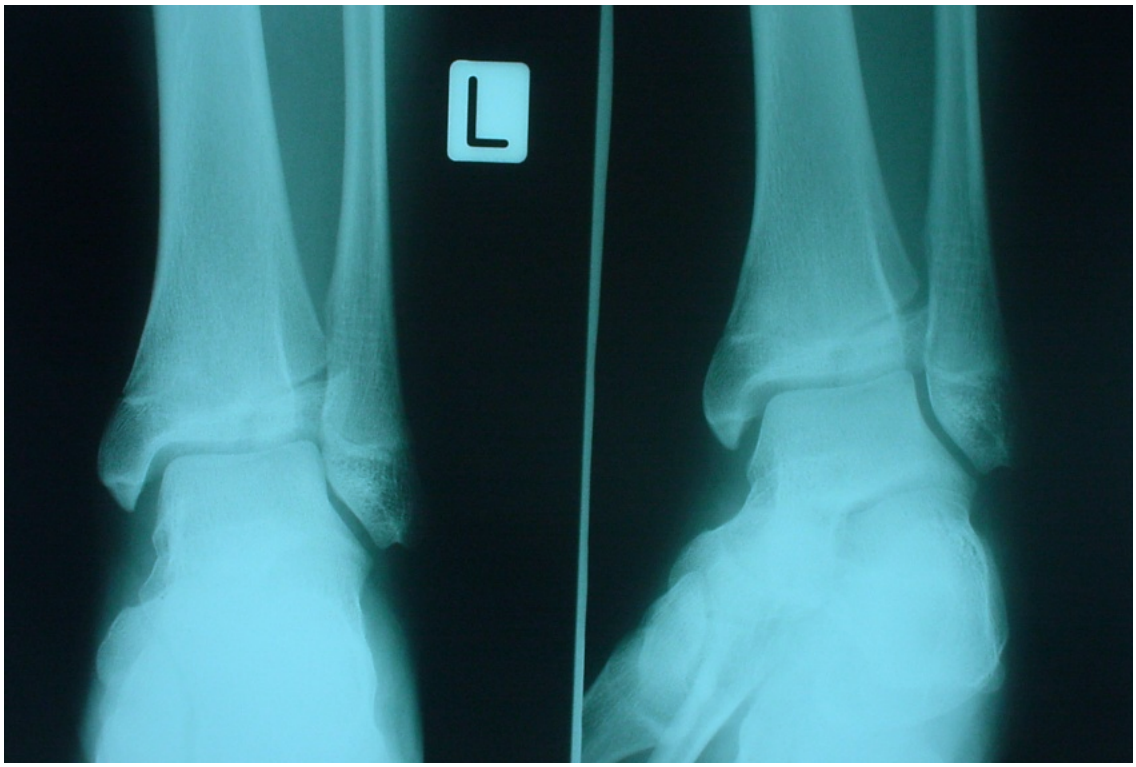
Case 2 Ankle Injury



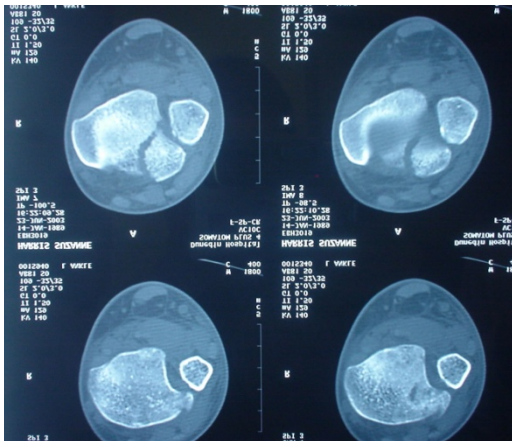
12-year-old girl presented with left ankle pain, swelling, and the inability to bear weight after falling at school and twisting her ankle.

Your Diagnosis

Diagnosis Tillaux Fracture

Dr Paul Tillaux (1834-1904) was a French surgeon and anatomist who first described fractures. He reported that stress on the anteroinferior tibiofi bular ligament could cause avulsion fractures of the lateral distal tibial epiphysis.

Further CT, a juvenile Tillaux fracture was diagnosed.



MECHANISM OF INJURY

Juvenile Tillaux fracture is a Salter-Harris type III intraarticular fracture of the ankle that involves the lateral aspect of the distal tibial epiphysis in adolescents.

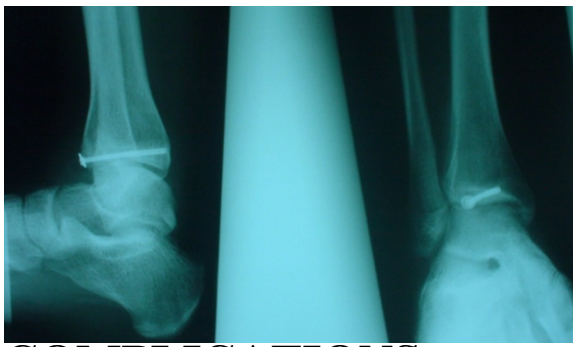
Juvenile Tillaux fractures account for 6% of pediatric ankle fractures, occur most commonly between the ages of 12 and 14 years, and occur more often in girls

The mechanism of force causing the juvenile Tillaux fracture is forced lateral rotation of the foot in the neutral position or supination, or medial rotation of the leg on the fixed foot.

The juvenile Tillaux fracture is unique due to the normal developmental order of fusion across the distal tibial physis. The distal tibial physis closes in the central portion first, followed by the medial portion, and finally the anterolateral corner. Therefore, external rotational force applied to the foot during this adolescent period could fracture and displace the lateral epiphysis.

When there is more or less than 2 mm of displacement on CT evaluation, surgical intervention is required.

Open/closed reduction and internal fixation is preferred in juvenile Tillaux fractures.
In present case, mini open reduction and 3.5 cannulated screw was used.
Closed reduction and intraoperative fluoroscopy/arthroscopy may be helpful in confirm the proper positioning of the screws and K-wires.



COMPLICATIONS

Juvenile Tillaux fractures can result in pain or stiffness for up to 2 years after the injury.
Juvenile Tillaux fractures have been associated with a

low incidence of growth disturbances, since there is minimal residual growth potential. A 10% incidence of premature physeal closure has bee reported.

Less commonly, joint incongruity may result in degenerative arthritis, varus or rotational deformity, tibiotalar slant, nonunion, delayed union, and leg-length discrepancy.