INTRODUCTION

1-**A hip fracture** is a break in a bone or bones of the hip, in a growing child's hip, the most common place for a fracture is the attachment point, where the muscles attach to bone. The attachment point is not fully formed yet, and so it is a weak point. Hip fractures, although quite common in elderly men and women, are rare among children because the immature hip bone is more supple and stronger than that of an adult.

This flexibility allows a child's hip bone to absorb greater energy than an adult hip bone before a fracture occurs. Fortunately, femoral neck fractures are rare in children, as they are associated with a high complication rate. Knowledge of the blood supply to the immature proximal femoral epiphysis is necessary to intelligently manage these injuries. The medial circumflex femoral artery is the most important vessel; it then divides into branches which traverse the neck to penetrate the head. These branches are vulnerable when the neck is fractured. In the infant, there are still some metaphyseal vessels penetrating the physis, these diminish markedly after 18 months. The posterior superior branch seems to have critical importance. **(Canale and Bourland, 1977).**

Most, but not all hip fractures in children result from severe trauma. A hip fracture, characteristically transepiphyseal, in an infant should arouse suspicion for the possibility of child abuse. These injuries can be mistaken radiographically for developmental dislocation of the hip if the history is not carefully weighed. MRI or arthrography may be helpful in establishing the

diagnosis. Infants can generally be managed with cast. Transepiphyseal fractures in older children generally have a miserable prognosis.

Transcervical and Cervicotrochanteric fractures comprise the most frequent varieties of children's femoral neck fractures. If there is any instability, fixation of the fracture is indicated. The type of fixation (threaded pins, smooth pins, cannulated screws, or compression screws) is dependent on the age of the patient and location of the fracture.

Anatomic reduction of the fracture is presently felt to be important in outcome, except for the infant with a type I fracture. Capsulotomy or aspiration has been advocated as an adjunct to fixation of the fracture as a measure to reduce the risk of avascular necrosis. **(Canale, 1990).**

2-Acetabular fractures in children and adolescents are uncommon injuries. The incidence of acetabular fractures in series of pelvic fractures in children ranges from 1% to 15 %.**(Canale and Beaty, 1996).**

Most of these injuries are seen in adolescents and only very few acetabular fractures occur in children who are younger than 10 years of age. The majority of injuries result from high-energy trauma, because tremendous force is required to fracture the strong and elastic pelvis in children.

In children, life-threatening visceral injuries may be present with minimal skeletal injury to the pelvis. A second important difference between acetabular fractures in adults and children is the possibility of physeal injury to the triradiate cartilage in children, which can lead to subsequent growth disturbance of the acetabulum**. (Heeg and Klasen, 1989).**

Triradiate cartilage injuries seem to be even more uncommon than nonphyseal acetabular fractures in children**. (Heeg and Visser, 1988).**

3- Dislocation of the femoral head out of the acetabulum socket occurs as a result of extreme force in general, but young children, especially those under 6 years; require only a trivial force to dislocate the femoral head **(Craig, 1980).**

This is attributed to the general laxity of the pediatric hip's surrounding Ligamentous structures and to the fact that the acetabulum in those younger than 6 years is largely cartilaginous. As the age of the child increases, greater force is required to dislocate the femoral head as these structures become more rigid. The acetabular cartilage complex is a unit—flat and triradiate medially, and cup-shaped laterally—that is, interposed between the ischium, ilium, and pubis **(Ponseti, 1978).**

This is the critical difference between children and adults. The cartilaginous volume, as well as the fact that the bones are less brittle, provides a greater capacity for energy absorption than that available to adults **(Currey, 1975)**.

Traumatic dislocation of the hip is classified according to the position of the displaced femoral head in relation to the acetabulum. The types of dislocation are posterior, anterior, central. Posterior dislocation is the most common type. It constitutes a true orthopedic emergency. It makes up over 80% of pediatric hip dislocations. **(Tachdjian, 1990).**