Should We Operate on Occult Hip Fractures?
Guy Rubin MD, Itzik Malka MD and Nimrod Rozen MD PhD
Department of Orthopedics, HaEmek Medical Center, Afula, affiliated with Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel

KEY WORDS: occult fracture, hip fracture, subcapital hip fracture, intertrochanteric fracture

OCcult hip fractures are well described in the literature, with the incidence of radiographically occult fracture estimated at 2–9% [1]. When an elderly osteoporotic patient presents a typical history and clinical presentation of a fall and hip pain, plain radiograph should confirm the diagnosis. When the X-ray is interpreted as normal, an occult fracture should be suspected and the patient should undergo investigation. Several modalities have been proposed such as computed tomography, bone scan and magnetic resonance imaging, which is now the study of choice [2-5]. The treatment for the occult fracture is not discussed in the literature and patients undergo conservative or surgical treatment. In this article we describe two cases of occult hip fracture, review the literature regarding the treatment of this kind of fracture and discuss the optional treatments.

PATIENT DESCRIPTIONS

PATIENT 1
An 87 year old man presented to the emergency room with hip pain following a fall. He was discharged after plain X-ray failed to demonstrate a fracture. Two weeks later he returned to the ER because of continued pain and ambulation only with assistance.

PATIENT 2
An 82 year old male presented to the ER with hip pain following a fall the day before. Plain X-ray demonstrated a fracture of the greater trochanter, with CT scan demonstrating the same fracture. He was admitted and a Tc99 bone scan was performed that showed uptake in the intertrochanteric region. The patient was able to move his leg and to sit. Non-operative treatment was agreed upon, and partial weight bearing was obtained one week later. After another week the patient was walking with minimal pain and at 2 months follow-up he was ambulating with no aid.

LITERATURE REVIEW
All the articles reporting occult hip fracture discuss the diagnosis strategy but not the treatment options. We found only six articles describing the treatment. Pandey and colleagues [3] describe 19 occult hip fractures (14 subcapital and 5 intertrochanteric); surgery was performed on all the patients except for one with an intertrochanteric fracture due to coexisting medical problems. Quinn et al. [2] report 11 occult hip fractures (5 subcapital and 6 intertrochanteric) and all their patients underwent surgery except for one with an intertrochanteric fracture. Rubin and team [4] describe 12 occult hip fractures (5 subcapital and 7 intertrochanteric), and all the patients underwent surgery except for one with an intertrochanteric fracture. In the series of 25 occult hip fractures (11 subcapital and 14 intertrochanteric) reported by Rizzo et al. [1], all the patients underwent surgery except for 4 with intertrochanteric fractures (the...
reason was not stated by the author) and managed with partial weight bearing. Alba and co-authors [5] reported four neck fractures; one patient was treated non-operatively with bed rest.

**COMMENT**

Occult hip fractures are common and the treating physician should suspect this type of fracture and be aware of the modalities to identify this fracture. The literature does not discuss the treatment strategy for occult hip fractures, and surgery seems to be the treatment of choice. The occult intertrochanteric fracture is a non-displaced fracture that is usually more stable than occult subcapital fracture and displacement does not change the surgical procedure. We only found a few authors who did not operate on this type of fracture, mainly due to medical problems. Rizzo et al. [1] was the only author who described partial weight bearing for these patients.

The goal of hip fracture treatment in the adult patient is early mobilization. We suggest the option of conservative treatment for patients with occult femoral intertrochanteric fractures who can be ambulated despite the fracture. By so doing the risk of surgical complications is obviated and also prevents complications in a non-ambulated patient.

**References**


**Capsule**

**New genetic associations detected in a host response study to hepatitis B vaccine**

The immune response to hepatitis B vaccination differs greatly among individuals, with 5–10% of healthy people failing to produce protective levels of antibodies. Several factors have been implicated in determining this response, chiefly individual genetic variation and age. Aiming to identify genes involved in the response to hepatitis B vaccination, a two-stage investigation of 6091 single-nucleotide polymorphisms (SNPs) in 914 immune genes was performed in an Indonesian cohort of 981 individuals showing normal levels of anti-HBs versus 665 individuals displaying undetectable levels of anti-HBs 18 months after initial dose of the vaccine. Of 275 SNPs identified in the first stage (476 normal/372 non-responders) with P<0.05, significant associations were replicated for 25 polymorphisms in 15 genes (503 normal/295 non-responders). Davila and co-workers have validated previous findings [HLA-DRA, rs5000563, P value combined = 5.57 × 10−16; OR (95%C.I) = 0.61 (0.52–0.71)]. In addition, the researchers detected a new association outside of the human leukocyte antigen loci region that passed correction for multiple testing. This SNP is in the 3’ downstream region of FOXP1, a transcription factor involved in B cell development [P value combined = 9.2 × 10−6; OR (95%C.I)=1.38 (1.2–1.6)]. These findings might help us understand the biological reasons behind vaccine failure and other aspects of variation in the immune responses of healthy individuals.

**Genes Immunity** 2010; 11: 232

Eitan Israel

“An eye for an eye would make the whole world blind”

Mahatma Gandhi (1869-1948), political and spiritual leader of India during the Indian independence movement. He was the pioneer of resistance to tyranny through mass civil disobedience, a philosophy firmly founded on total nonviolence – which led India to independence and inspired movements for civil rights and freedom across the world.