

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

IMAJ 2010; 12: 316-317

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.

ER = emergency room

CT scan was performed [Figure A] and was interpreted as negative for fracture. He was admitted and a Tc99 bone scan was performed showing uptake in the intertrochanteric region [Figure B]. We discussed the treatment options and decided that since the patient was able to ambulate we would not operate. The patient's follow-up was unremarkable and he was able to walk unassisted.

[A] CT coronal view of pelvis. The CT does not demonstrate a fracture



[B] Tc99 bone scan demonstrating uptake in the intertrochanteric region



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 that was inoperable because he was not suitable surgically. 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, as for other usual hip fractures, in order to reduce morbidity and mortality. We believe that occult hip fractures should be divided into two groups: cervical and intertrochanteric.

The occult cervical fractures are non-displaced intraarticular fractures that can easily be displaced. The displacement of a cervical hip fracture raises the prevalence of non-union and avascular necrosis necessitating differ-

ent treatment (hemiarthroplasty or pinning). This makes surgical treatment of the cervical hip fracture the treatment of choice. Our literature review revealed that surgery was performed in 97.4% (38/39) of cases with this kind of fracture.

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.

Acknowledgments:

We thank Frances N.J Nachmani and Tova Bick for their help in preparing this manuscript for publication.

Correspondence:

Dr. G. Rubin

Dept. of Orthopedics, HaEmek Medical Center, Afula 18101, Israel

Phone: (972-4) 649-4300

email: guytalr@bezeqint.net

References

1. Rizzo PF, Gould ES, Lyden JP, Asnis SE. Diagnosis of occult fractures about the hip. *J Bone Joint Surg Am* 1993; 75: 395-401.
2. Quinn SF, McCarthy JL. Prospective evaluation of patients with suspected hip fractures and indeterminate radiographs – use of T1-weighted MR images. *Radiology* 1993; 187: 469-71.
3. Pandey R, McNally E, Ali A, Bulstrode C. The role of MRI in the diagnosis of occult hip fractures. *Injury* 1998; 29: 61-3.
4. Rubin SJ, Marquardt JD, Gottlieb RH, Meyers SP, Totterman SM, O'Mara RE. Magnetic resonance imaging: a cost-effective alternative to bone scintigraphy in the evaluation of patients with suspected hip fractures. *Skel Radiol* 1998; 27: 199-204.
5. Alba E, Youngberg R. Occult fractures of the femoral neck. *Am J Emerg Med* 1992; 10(1): 64-8.