

Spasm Induced Spontaneous Bilateral Hip Fractures

K Marya, V Yadav, Z Kundu

Citation

K Marya, V Yadav, Z Kundu. *Spasm Induced Spontaneous Bilateral Hip Fractures*. The Internet Journal of Orthopedic Surgery. 2003 Volume 2 Number 1.

Abstract

A previously unreported case of bilateral spontaneous fractures of the femoral necks is presented. Spasmodic muscular contractions due to tubercular spondyloarthropathy have not previously been instigated as a cause of bilateral hip fractures.

INTRODUCTION

We report on a case of a 75 year old man with paraparesis (Grade IV of Tuli classification) ¹¹, having suffered spontaneous bilateral fractures of the femoral neck due to flexor spasms. These spasms were due to longstanding tubercular spondyloarthropathy of the upper thoracic spine.

CASE REPORT

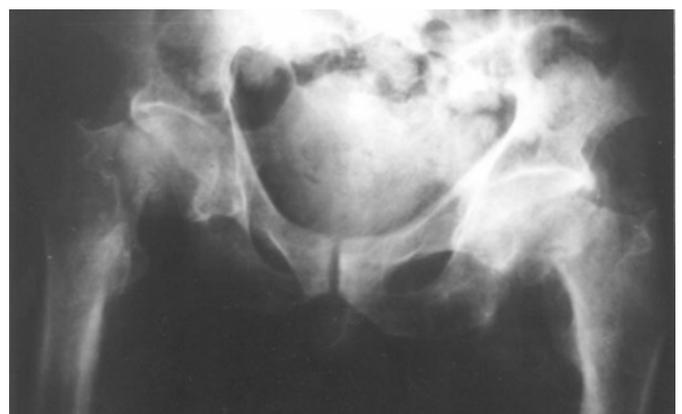
A seventy-five year old man with paraparesis presented with history of abnormal crepitus and mild pain in both hip regions. The patient had longstanding tuberculosis of the upper thoracic (T5-T6) spine. Antero-lateral decompression (ALD) of spine had been performed 6 years ago for the treatment of grade IV spastic paraplegia, intermittent flexor (hip and knee) spasms of ilio-psoas and hamstring muscles and bowel-bladder involvement at that time. He had partial neurological recovery after the surgery. At the time of presentation at our institute, he had complete control of bowel and bladder functions, grade II power at hip, knee and ankle and partial sensory deficit. Intermittent flexor spasms with spasticity in both lower limbs had persisted after undergoing surgery. He was confined to a wheelchair. The patient complained of pain and crepitus arising from the left hip of one-month duration, similar complaints were noted on the right side two weeks later. The pain was exacerbated during flexion of hips. There had been no previous history of trauma, epilepsy, convulsions, renal disease, alcoholism or fluoride treatment. His general physical examination was unremarkable except for spine and hips. There was no inguinal lymphadenopathy.

Complete blood count, erythrocyte sedimentation rate, serum alkaline phosphatase and calcium and phosphate levels were all normal as were parathyroid hormone levels, T3, T4 and

TSH (thyroxine and thyroid stimulating hormones). His values for 24-hour urinary excretion of calcium and phosphates, serum creatinine, creatinine clearance and serum testosterone were also normal. The radiographs showed bilateral displaced femoral neck fractures, osteopenia, and osteoarthritis of left hip without any evidence of tubercular pathology (Fig.1). The fractures were managed non-operatively because the patient had been confined to a wheelchair. Chemical or surgical neurectomy was not performed as lower limb sensation was partly spared. The patient was put on centrally acting muscle relaxants (Baclofen) and analgesics. Both fractures went into non-union. His pain resolved after 3 weeks.

Figure 1

Figure 1: X-ray of pelvis showing bilateral displaced femoral neck fractures



DISCUSSION

The common etiological factors identified for these very rare fractures have been reported to be trauma⁵; stress²; hypocalcaemic, epileptic, drug induced or electrically induced convulsions.^{4,8,9,10} It has also been reported in cases

of ankylosing spondylitis⁷, cirrhosis⁶, renal disease¹ and osteomalacia³. Paraplegia with flexor spasms has not been reported as a cause of bilateral spontaneous displaced femoral neck fractures. It is well known that bone mineral density decreases after a spinal injury in 5 years time to fracture threshold levels. In the present case, the cause of fracture seems to be a combined effect of repeated stress from intermittent flexor spasms and osteoporosis secondary to immobilisation.

This patient demonstrates the fragility of hips in the elderly, after a period of immobilization. The stresses of frequent spastic movements may help to negate the effect of immobilization-induced osteoporosis, but when imposed on already weakened senile bone, can cause bilateral femoral neck fractures. This might be so because stress fractures in the intracapsular regions do not heal readily and osteopenia further impedes union and therefore predisposes to fracture displacement. Although relatively painless and inconsequential in paraplegic patients, these fractures maybe prevented by initiating prophylactic medical treatment for osteoporosis (SERMS and Alendronate) and surgical treatment (chemical or surgical rhizotomy, neurectomy, cordotomy, Baclofen infusion pumps etc). Patients with spasmodic muscular contractility in whom prolonged immobilization is anticipated are at risk.

CORRESPONDENCE TO

Dr. K. M. Marya Ramdenee Lane, Royal Road, Forest Side,

Curepipe, Mauritius Ph: +230 6740520 Email:
dr_marya@hotmail.com

References

1. Akçali Ö, Koşay C, Günel I, Alici E. Bilateral trochanteric fractures of the femur in a patient with chronic renal failure. *Int Orthop* 2000; 24:179-180.
2. Annan IH, Buxton RA: Bilateral stress fractures of the femoral neck associated with abnormal anatomy: A case report. *Injury* 1986; 17:164-166.
3. Chadha M, Balain B, Maini L, Dhal A: Spontaneous bilateral displaced femoral neck fractures in nutritional osteomalacia - a case report. *Acta Orthop Scan* 2001; 72:94-96.
4. Gerster JC, Charhon SA, Jaeger P, et al: Bilateral fractures of femoral neck in patients with mild renal failure receiving fluoride for spinal osteoporosis. *Br Med J* 1983; 287:723-725.
5. Günel I, Güroy Y, Araç S: Traumatic bilateral fractures of the femoral neck (a case report). *Hacettepe J Orthop Surg* 1991; 1:4.
6. Hoffmann F: Bilateral spontaneous femoral neck fracture in chronic alcoholism and liver cirrhosis. *Z Orthop Ihre Grenzgeb* 1987; 125:447-449.
7. Korovessis P: Bilateral fatigue fracture of the femur neck in Bechterew disease. Case report. *Z Orthop Ihre Grenzgeb* 1984; 122:716-717.
8. Madhok R, Rand JA: Ten-year follow-up study of missed, simultaneous, bilateral femoral-neck fractures, treated by bipolar arthroplasties in a patient with chronic renal failure. *Clin Orthop* 1993; 291:185-187.
9. Powell HDW: Simultaneous bilateral fractures of the neck of femur. *J Bone Joint Surg* 1960; 42B:236-252.
10. Taylor LJ, Grant SC: Bilateral fractures of the femoral neck during a hypocalcaemic convulsion: A case report. *J Bone Joint Surg* 1985; 42B:536-537.
11. Tuli SM: Tuberculosis of the skeletal system. 2nd Ed. New Delhi: Jaypee Brothers Publishers; 1997. Pp 219-220.

Author Information

K. M. Marya, MS (Ortho)

Assistant Professor, Department of Orthopaedic Surgery,, SSR Medical College

V. Yadav, MS (Ortho)

Lecturer, Department of Orthopaedics, Pt. BD Sharma Postgraduate Institute of Medical Sciences

Z. S. Kundu, MS (Ortho)

Lecturer, Department of Orthopaedics, Pt. BD Sharma Postgraduate Institute of Medical Sciences