

Bilateral Subtrochanteric Fracture of Femur in a Young Patient with Osteoporosis

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Abstract

Case Report

This is a 35-year-old party followed in psychiatry for bipolar disorders, admitted to us for the management of bilateral femoral subtrochanteric fracture in which an internal osteosynthesis by DHS plate screw has been indicated. Evolution was mired by an iterative fracture.

Keywords: Subtrochanteric fracture, Itérative, Osteosynthesis.

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INTRODUCTION

A true public health problem, because their incidence continues to grow, the fractures of the superior end of the femur are heavy of consequence. In fact, they are life-threatening for the elderly and the prognosis for the young. These fractures are extremely frequent, daily in emergency services. In the typical form it is a fracture of the elderly subject, female (2/1) occurring after a fall in height (sometimes the fracture is spontaneous and causes the fall). The female population is more often affected because the main cause of these fractures is osteoporosis, which is more common in the post-menopausal period. In the young subject, it is a violent high energy accident, often in the context of a polytrauma.

OBSERVATION

It is about a patient aged 35 years old followed in psychiatry for bipolar disorders, victim of a fall of one meter of height with reception on the basin causing a traumatism of the two hip with pain and total functional impotence of the two lower limbs. Patient was afebrile with stable vital signs. The both thighs was tender to palpation, swollen and local temperature was not raised. The patient was unable to lift the lower limb and passive rotation was painful. The pelvis was stable without tenderness on palpation. There was no distal neurovascular deficit in both lower limbs. Radiographs revealed sclerotic bones consistent with osteoporosis. X-rays of hip and thigh showed fracture of bilateral subtrochanteric femur (Figure-1). The Patient was taken

to the operating room for open reduction, internal fixation with a dynamic hip screw (DHS) implant with side plate and bone grafting (Fig-2). The DHS implant was chosen. Three months later the patient is admitted to emergency for iterative fracture following a fall of his highness (Figure-3). We did the same technique using this time a longer plate (Figure-4)



Fig-1: Fracture of bilateral subtrochanteric femur



Fig-2: Open reduction internal fixation with a dynamic hip screw (DHS) implant with side plate and bone grafting



Fig-3: Iterative fracture of the right femur

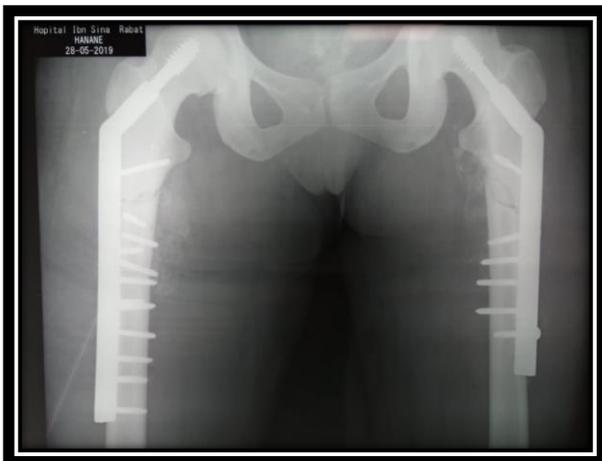


Fig-4: Internal osteosynthesis by DHS with a long plate

DISCUSSION

The fractures of the upper extremity of the femur occur most often in elderly subjects with an associated site of osteoporosis and most often secondary to a low energy trauma, whereas in young

subjects the mechanized is most often a trauma to high energy as the accidents of the public way. In our context, it is about a young patient of 35 years followed in psychiatry for bipolar disorders for 15 years under psychotropic who presents a bilateral fracture subtrochanterienne following a fall according to the statements of his family and his treating doctor. The indication of an internal osteosynthesis by DHS plate screw was taken in front of the narrowness of the medullary canal making difficult the intramedullary nailing and increasing the operating time. The patient consulted again 3 months later for an iterative fracture following a fall of its height with breakage of the materials. Indeed, it has been realized that this is a secondary osteoporosis induced by psychotropic drugs that cause a decrease in the intestinal absorption of calcium and by decreasing the plasma level of vitamin D thus promoting the occurrence of fractures. An osteoporosis assessment was requested: bone density and phosphocalcic balance and biphosphonate treatment was started in our patient. As for the surgery, the same technique was used, ie a DHS plate screw but with a long plate. It is estimated that at the age of menopause, one woman in two will have at least one fracture by the end of her life. After 80 years, 70% of women are osteoporotic and 60% of them have one or more fractures. Osteoporotic fractures are less common in men (about 15% of men over 50 have fractures), but could be more serious [1].

Apart from the skull, the cervical spine and the first three thoracic vertebrae, the hands and toes, all the bone sites may be the site of a fragility fracture. The low energy of a trauma is defined by a simple fall in height or a maximum height of 50 cm, when stopping or walking. Osteoporosis can also promote fracture during higher energy trauma [2]. Bone fissures (incomplete fractures, without cortical rupture) can also be fragility fractures, even if a certain number of them are associated with an excess of mechanical stress leading to bone failure (so-called fatigue or "stress fractures"). Finally, recent data point to the fact that fractures occurring in adolescents or young adults are associated with a higher risk of osteoporotic disease after 50 [3, 4].

Upper extremity femoral fractures are associated with significant morbidity and mortality, with frequent loss of autonomy in elderly subjects and a risk of death in the year multiplied by two to four in relation to the population General. The excess mortality associated with all types of fractures is particularly pronounced for men and women over 75 years of age [5, 6]. The little or no symptomatic nature of vertebral fractures makes their incidence more difficult to assess. They are often unknown (only a third would be diagnosed) which underlines the interest of a clinical screening (size, deformations in kyphosis of the thoracic spine) and X-ray in case of atypical and persistent spinal pain in a menopausal woman. Their

incidence increases with age from 5.5 (per 1000 population per year) for women aged 55-59 to 29.3 for 75-79 year olds. They are associated with a high risk of re-offending: women who have had a vertebral fracture are five times more likely to have a new one within one year [7]. This risk, also observed for non-vertebral fractures, is highest in the two years following the first fracture in postmenopausal women [8].

The indication of a drug treatment always results from an individual evaluation of the risk of fracture - in this case of fracture recurrence - by the identification of the clinical factors, associated with the interpretation of bone densitometry, possibly with the support of the FRAX tool mentioned above. The goal of treatment is to prevent fractures. This treatment should be considered as a management of a chronic disease. It is therefore essential to appreciate the patient's motivation and to make him or her aware of the problem of adherence, which remains a limit to the effectiveness of the treatment [9]. In fact, nearly one out of two patients stops their treatment after six to 12 months. The classes of drugs that have Marketing Authorization today are divided according to their action on osteoclastic resorption, on formation by osteoblasts or on both.

In our context we have opted for bisphosphonates. These are stable analogues of pyrophosphates which are incorporated and therefore easily accumulate in the bone matrix [10, 11]. They are essentially anti-osteoclastic. Tolerance is generally good, but digestive absorption is poor and can lead to esophagitis. They are contraindicated in case of renal failure with a creatinine clearance below 30 mL / min, in case of pregnancy and allergy. Very rare cases of osteonecrosis of the jaw have been reported with bisphosphonates.

CONCLUSION

Atypical femur fractures, a phenomenon unknown a few years ago, have recently been identified as one of the undesirable side effects of long-term psychotropic treatment. Based on the principle that we only see what we know, these fractures have often been confused with commonplace osteoporotic or traumatic fractures. As proof, a recent retrospective review of all radiographs of femur diaphyseal fractures in patients of different ages admitted to the emergency department during the last ten years, has identified several tens of atypical fractures, with the patients concerned, a very high proportion of patients treated with psychotropic drugs. Conflicts of interest

The authors do not declare any conflict of interest.

Contributions of the Authors: All authors have read and approved the final version of the manuscript.

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