

Editorial

Giovanni Iolascon · Giuseppina Resmini ·
Umberto Tarantino

Published online: 18 September 2013
© Springer International Publishing Switzerland 2013

Fragility fractures are the peculiar clinical features of severe osteoporosis and represent the real object of interest of the orthopedic surgeon. Patients who sustain a fragility fracture need to return promptly to the premorbid level of functioning, activities and social participation. Therefore, there is an increasing demand for efficient surgical treatments.

The orthopedic surgeon is the first specialist who deals with patients who experience a fragility fracture; therefore, he has the ethical and medical duty to make a correct and exhaustive diagnosis, gaining insights into the injury mechanism (low energy), fracture site, type of bone involved (trabecular or cortical), characteristics and circumstances of falls, and all the other information regarding the clinical history of the patients.

Considering osteoporosis and not only the fracture is important for the Orthopedic Surgeon in order to plan the therapeutic approach, either conservative or surgical.

The reduction of bone mass and especially the qualitative alterations of bone tissue have to be taken into account when planning the best surgical treatment. Reduced cortical bone thickness, porosity, and the loss of trabecular bone lead to decreased holding power of standard fixation hardware. Thus, when fixation is planned in osteoporotic bone, it is important to choose implants that maximize the contact surface area with the remaining bone.

Surgery failures generally occur because the bone–implant interface results in cutout, fracture subsidence, or plate pull-off. Operative techniques might be modified when managing fractures in osteoporotic patients.

At the same time, the orthopedic surgeon should also plan the pharmacological treatment of osteoporosis. This is important to prevent other fractures, which are very common, especially during the first year after the fracture, no matter how it is treated.

Even though this pharmacological approach should run in parallel with the orthopedic approach, according to the statistics this does not usually happen.

Many national and international orthopedic societies are actively involved in the organization of events and projects aimed at improving the knowledge on osteoporosis for orthopedic surgeons.

The GISOOS (Italian Orthopedic Group for the Study of Severe Osteoporosis) aims to promote technical and scientific research in the field of severe osteoporosis and fragility fractures, in order to improve the correct orthopedic approach to the patient with this pathology.

The 2nd National Congress of the GISOOS focused on three fundamental aspects of severe osteoporosis: bone quality, bone healing, and surgical procedures for fragility fractures.

Recognition of the poor bone quality by orthopedic surgeons is essential. Several bone structural alterations occurring with aging and leading to biomechanical changes make the bone more prone to fracture and more difficult to repair using standard techniques.

One of the open issues is whether or not osteoporotic bone has an increased healing time and a higher risk of non-union; what is certain is that osteoporotic bone has an impaired ability to hold screws due to its cortical thinning and porosity, to trabecular rarefaction and micro-

G. Iolascon (✉)
Naples, Italy
e-mail: giovanni.iolascon@gmail.com

G. Resmini
Treviglio (BG), Italy

U. Tarantino
Rome, Italy

architectural changes due to the reduction of the fracture. Therefore, surgery complications and failure rates range from 10 to 25 %. An ongoing challenge is to develop drugs specifically aimed at improving bone fracture healing and implant fixation.

Recently, there have been advancements in the surgical implants used in the treatment of fragility fractures. This is true especially in hip and proximal humeral surgery. All

orthopedic surgeons wish to use the latest technological devices hoping that this might be the key to perform a successful surgery. Unfortunately this is not always true.

This supplement of Aging is entirely dedicated to experiences in fragility fractures management of the Orthopedic Surgery Units in Italy.

Conflict of interest None.