

The Inadequate Treatments for Patients before and after Osteoporotic Hip Fracture

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Opinion

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Hip fracture will count for a significant problem in the aging group in the near future. Although the fracture is always being considered unexpected, either the fracture itself or the complication of the fracture treatments, patients and medical personnel should aware of the so call unexpected fractures and complications are really preventable and predictable with careful alertness.

We review four groups of our patients in the follow conditions from 2016 to 2018.

1. Osteoporotic hip fracture with age more than 70.

2. Subsequent hip fracture of group 1
3. Fixation implant failure of group 1
4. Periprosthetic fracture after hip fracture of group 1

Group 1

There were 440 hip fractures, upon the fracture, only 15% of the patient had performed BMD study within 2 years, and 1/4 of them received osteoporotic treatment. For those who did not have recent BMD data, we arranged the study and reflected more than 89% were osteoporosis (T-score <-2.5) (Figures 1A & 1B).



Figure 1A: 83y/o F.

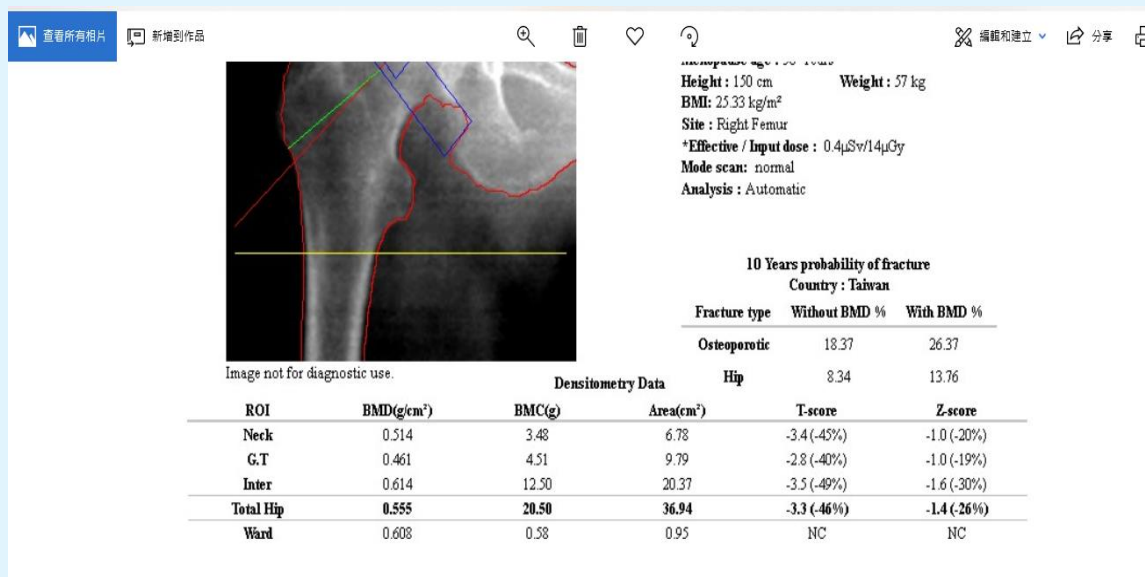


Figure 1B: Poor MBD.

Group 2

7.5% subsequent fracture occurred in above 440 fractures in the period of 5weeks to 26 months. The immediate BMD after fracture showed 92% as vase

majority of the patients stayed at T-score -2.5 or less. While less than 10% of these patient received appropriate osteoporotic medication before the subsequent fracture for fracture prevention (Figures 2A & 2B).



Lt subsequent fracture 26 mons s/p



Management with bipolar

Figure 2A: 95 y/o F.

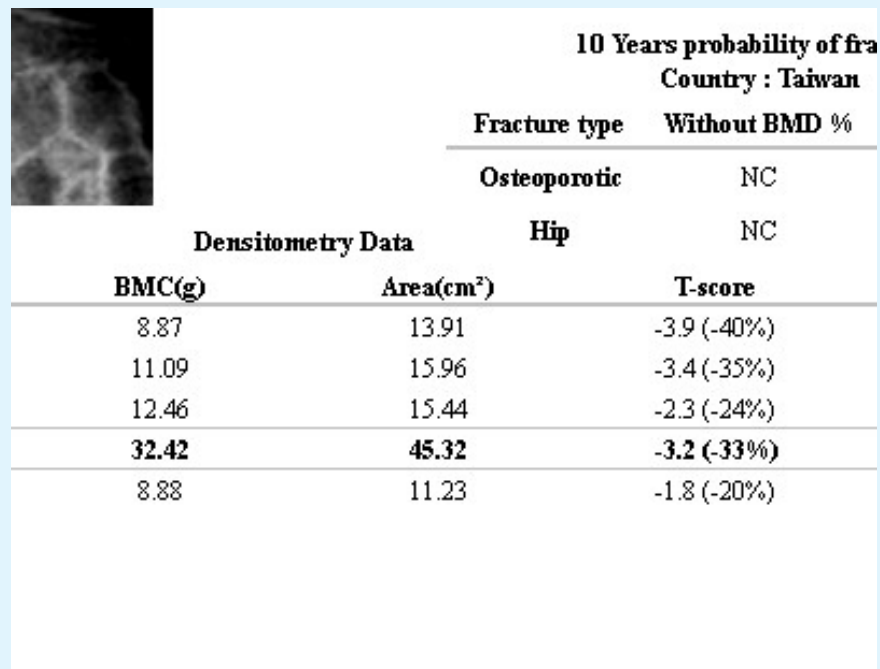


Figure 2B: Poor BMD at subsequent fracture.

Group 3

For fixation implant failure, we noticed that poor bone quality will reduce the anchorage power for metallic implants and induce rapid implant failure such as loosening, loss of reduction Z-effect etc. Although the

failure rate was 6.8% among those 440 patients, almost all of them need revision surgery. Again their BMD were unreasonably low at revision and not under any monitoring after the fracture. (<15% treated with medication and BMD follow up) (Figures 3A & 3B).

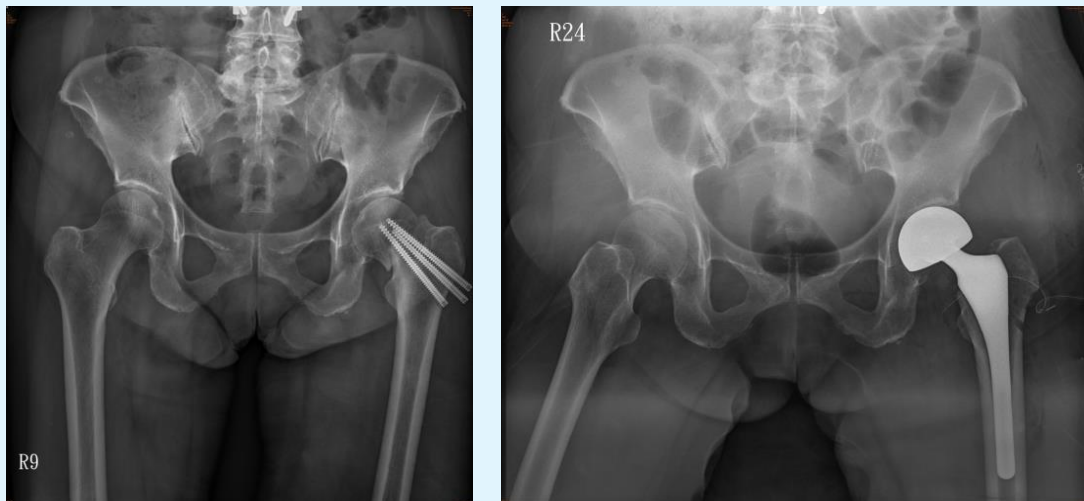


Figure 3A: 68 y/o F post op 3 weeks Revision with Bipolar prosthesis.

| 10 Years probability of fracture Country : Taiwan | | | |
|--|--|--------------------|--------------------|
| Fracture type | | Without BMD % | With BMD % |
| Osteoporotic | | 8.78 | NC |
| Hip | | 2.32 | NC |
| ometry Data | | T-score | Z-score |
| Area(cm ²) | | | |
| 17.41 | | -5.3 (-55%) | -3.5 (-45%) |
| 13.62 | | -3.8 (-40%) | -2.1 (-26%) |
| 31.02 | | -4.6 (-48%) | -2.9 (-37%) |
| 12.43 | | -0.2 (-2%) | 1.5 (21%) |
| 12.19 | | NC | NC |

Figure 3B: Poor BMD before revision.

Group 4

5.8 % of periprosthetic fracture had drawn the attention for revisions and most of them were in Bipolar prosthesis while similar unaware status of osteoporotic treatment and study was noticed.

In these groups of patient, the so called unexpected episodes of fracture and complication were actually preventable, the inadequate awareness of poor bone quality warrant the episodes due to either uncommon BMD study or uncommon osteoporotic medication, or both (Figures 4A & 4B).

To improve the control of these preventable issues, we highly recommended the following.

1. Routine monitoring of BMD after 65
2. To treat those who meet the criteria of osteoporotic treatment with education and medications
3. Once hip fracture suffered, continuous BMD monitoring and osteoporotic medication is mandatory
4. Appropriate implants for fixation to prevent implant failure
5. Bone quality evaluation should be done proceeding the scheduled total joint replacement surgery
6. Once a fair or poor bone quality is found, total joint replacement should be performed after appropriate management with osteoporotic medication, exercise training etc. to prevent periprosthetic fracture

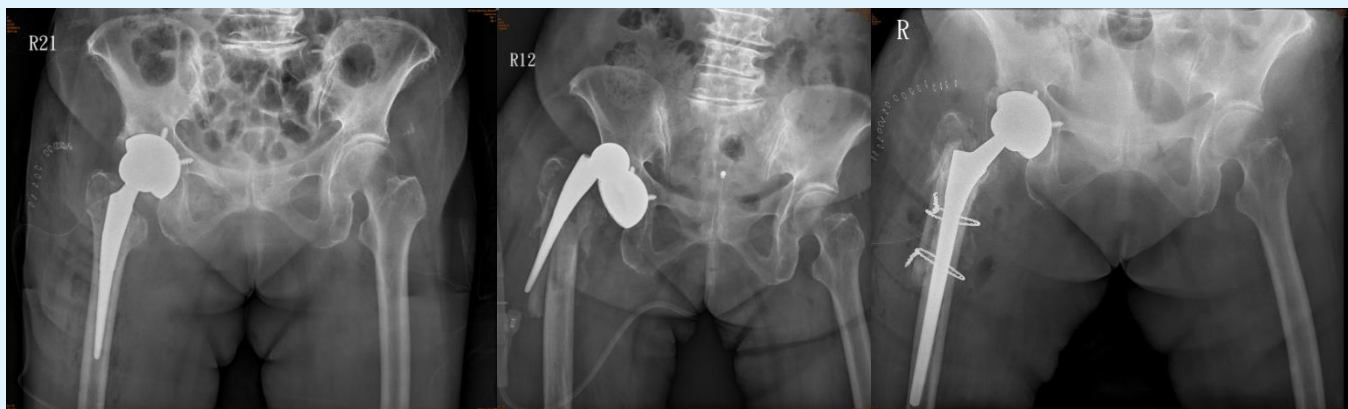


Figure 4A: 73y/o F Post op 2 weeks.

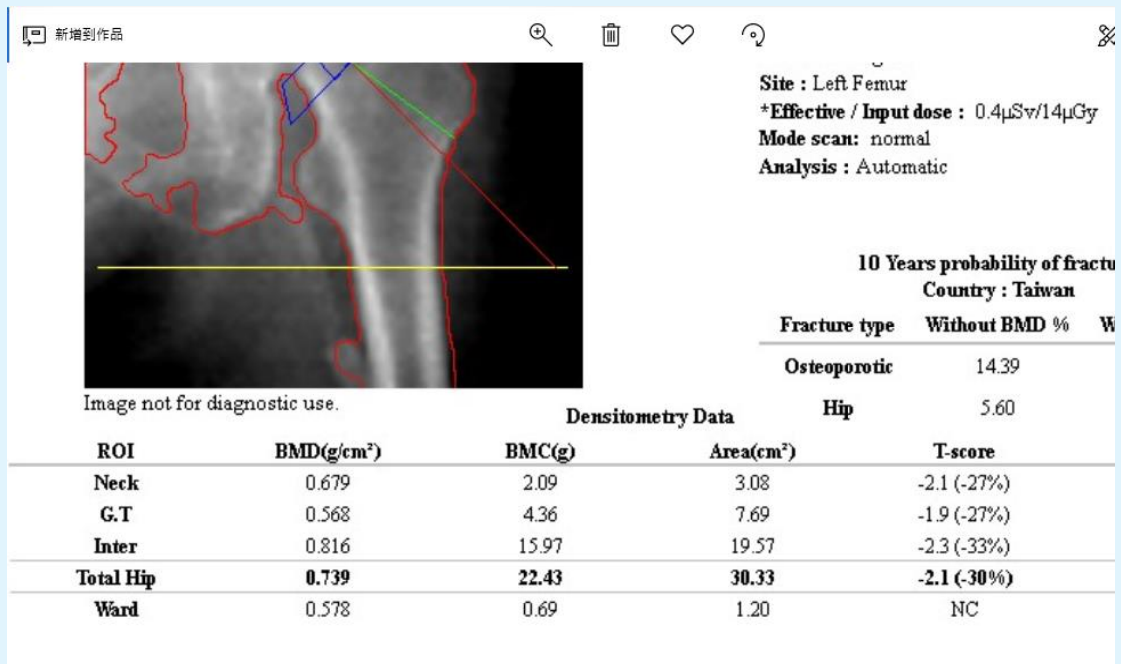


Figure 4B: Revision with long stem THA.

