Teachable Moment

Closing the Osteoporosis Care Gap
A Teachable Moment

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Story From the Front Lines

A 91-year-old woman presented to the hospital with right-sided hip pain after losing balance and falling from standing height. On examination, her right leg was shortened and externally rotated. There was pain in the right groin and hip with movement. A radiogram of her right hip and pelvis revealed a peritrochanteric fracture. She was taken urgently to the operating room, where she underwent an open reduction and internal fixation.

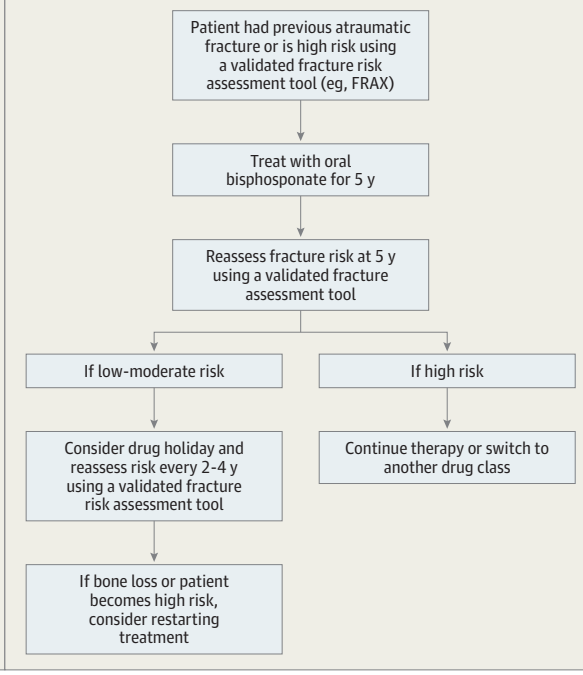
The patient presented to her primary care physician 2 years prior with lower back pain immediately after a fall from standing height. A radiogram of the lumbar spine at that time demonstrated a compression fracture of L5. She was diagnosed with an acute atraumatic vertebral fracture and given a prescription for analgesia. While the patient had an uncomplicated recovery from surgery, she and her daughter wondered what could have been done to prevent this hip fracture.

Teachable Moment

Osteoporosis is a systemic skeletal disease characterized by decreased bone mineral density (BMD) and deleterious changes to the bone microarchitecture, which can lead to atraumatic or fragility fractures, defined as a fracture occurring spontaneously or following minor trauma such as a fall from standing height or less.[1] Osteoporosis is common, affecting approximately 10% of adults older than 50 years. An initial osteoporotic fracture increases the risk of repeat fracture, independent of BMD.

To prevent recurrent fractures and their associated complications, clinical practice guidelines recommend pharmacologic treatment after an initial fragility fracture, regardless of BMD.[2] Owing to their effectiveness and safety, bisphosphonates, specifically alendronate and risedronate administered once weekly, are recommended as first-line treatment for primary and secondary prevention of osteoporotic fractures (**Figure**[2]). A meta-analysis of 12 randomized clinical trials showed that compared with placebo, alendronate reduced the risk of vertebral, hip, and nonvertebral fractures in patients with osteoporosis by 44%, 40%, and 17%, respectively.[2] Risedronate is similarly effective. Upper gastrointestinal adverse effects may occur owing to the local effects of oral bisphosphonates on the esophagus, but they are uncommon if

Figure. Overview of Oral Bisphosphonates Used to Treat Osteoporosis

	Alendronate	Ibandronate[a]	Risedronate
Dose and frequency[b]	70 mg Once weekly	150 mg Once monthly	35 mg Once weekly OR 150 mg once monthly
Monthly cost[c]	$85	$340	$650
Duration of therapy[2]			

[a] Ibandronate has not been proven to reduce hip or nonvertebral fracture risk.[2]

[b] Intravenous zoledronic acid, 5 mg once annually, is recommended for patients with a gastrointestinal contraindication to oral bisphosphonates.

[c] Mean cash price from http://www.GoodRx.com.

patients stay upright for at least 30 minutes after dosing. Intravenous bisphosphonates such as zoledronic acid can be used if patients have gastrointestinal contraindications to oral bisphosphonates or cannot follow dosing instructions. Other antiresorptive agents, including the RANKL inhibitor denosumab, can be considered if patients have other contraindications to bisphosphonates, such as renal insufficiency. For patients at very high risk of fracture, such as those with severe or multiple vertebral fractures, osteoanabolic agents (eg, teriparatide) are available.

Despite evidence supporting antiresorptive therapy for secondary fragility fracture prevention, few patients receive evidence-based treatment after a first atraumatic fracture. This discrepancy between guidelines and real-world practice is termed the *osteoporosis care gap*, with fewer than 20% of patients who sustain a fragility fracture receiving osteoporosis treatments.[3]

Experts postulate several explanations for the care gap. Lack of reimbursement for osteoporosis care, concern about rare adverse effects (eg, atypical femur fracture, osteonecrosis of the jaw) related to bisphosphonate treatment, and limited clinician familiarity with pharmacotherapy may all contribute to lower prescribing rates.[3] As in the present patient, failure to start antiresorptive therapy after an initial fracture may lead to secondary fractures, resulting in decreased quality of life, chronic pain, loss of independence, placement in long-term care facilities, and even death.

How can we increase prescribing of antiresorptive therapies after fragility fracture? A systematic review and meta-analysis[4] identified 3 effective strategies: (1) structural changes and modifications to the health care system, (2) formalized education to health care professionals and patients, and (3) reminders for health care professionals and patients. Clinicians can also access the National Osteoporosis Foundation's guidelines (https://www.bonesource.org/clinical-guidelines) to review indications, contraindications, and guidance for prescribing pharmacotherapy. These resources also highlight specifics of risk stratification, diagnostics, fall prevention, and nonpharmacologic treatments such as smoking cessation, weight-bearing exercise, and adequate nutritional intake.

Other innovative solutions are order sets that include antiresorptive therapies, enabling prescribing by other members of the care team (eg, pharmacists, physician extenders) and medical-surgical comanagement care models. Decision aids based on fracture risk assessment tools embedded into the electronic health record could also help clinicians decide when antiresorptive therapy is indicated. Radiologists could amend dual-energy x-ray absorptiometry reports to include recommendations for osteoporosis management, similar to diagnostic imaging reports for thyroid and pulmonary nodules. Emerging evidence suggests that both traumatic and atraumatic fractures increase the risk of future fractures in postmenopausal women.[5] Removing the historical distinction of fracture mechanism could simplify the diagnosis of osteoporosis, which might motivate clinicians to consider antiresorptive therapies after any fracture, thereby improving prescribing rates.

In summary, many patients fail to receive appropriate treatment for osteoporosis after an initial fragility fracture, which unnecessarily increases the common, costly, and morbid risks of refracture. This patient's story highlights the prevalence and consequences of the osteoporosis care gap, and we hope it will encourage clinicians to routinely prescribe antiresorptive therapies to patients for secondary prevention of osteoporotic fractures.

ARTICLE INFORMATION

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