Pathophysiology of Osteoporosis

Sarah Orr
Otterbein University, sarah.orr1115@gmail.com

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn
Part of the Nursing Commons

Recommended Citation
https://digitalcommons.otterbein.edu/stu_msn/385

This Project is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Nursing Student Class Projects (Formerly MSN) by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact Whybrew1@otterbein.edu.
When estrogen levels are reduced in women, the bone density may decrease, making osteoporosis more likely. Estrogen is thought to be the most essential factor for bone health; estrogen deficiency results in slower bone growth and a reduced bone density. Almost twice as common in women as in men (Takahata-Malay et al., 2017), bone loss may not be detected until up to 30% of bone loss has already occurred (Berry, 2019). Understanding bone: what is osteoporosis?

Bone deformities may occur as disease progresses and integrity of the bone is compromised (McCance & Huether, 2018). Pain does not usually occur until a fragility fracture occurs (McCance & Huether, 2018). Kyphosis and loss of height are presentations that may occur as time compromised bone density increases for 10 years (Nutt et al., 2019). Osteopenia is not detectable until up to 30% of bone loss has already occurred (Nutt et al., 2019). A patient may not be screened for osteoporosis until after a fragility fracture has already occurred (Nutt et al., 2019). The cumulative morbidity and mortality associated with the fractures that result from osteoporosis has a profound impact on the functioning of the body, decreasing quality of life for patients (Nutt et al., 2019). Colles’ fracture in the wrist is considered an early pathologic sign of osteoporosis (Jantzen et al., 2016).

Case Study of Osteoporosis

Mary Sue Ellis is a 72 year old Caucasian female. She is a somber active. Her health history has been unremarkable. Mary’s doctor routinely encourages her to remain active and participate in weight bearing exercises.

Early one morning Mary Sue was getting dressed for the day. She slipped on some water on her bathroom floor. Mary Sue was unable to get up. Her husband called the paramedics who brought her to a local hospital. Mary Sue argued her fall was minor and low impact resulting in osteoporosis (Dart, 2016).

Significance of Pathophiology

When estrogen levels are reduced in older women, bone density may decrease, making osteoporosis more likely. Osteoporosis is the progressive loss of bone density (Berry, 2019). Osteoporosis is the most common bone disease (McCance & Huether, 2018). Certain pathologies can have a significant impact leading to fragility fractures (Huether & Noll, 2017). Certain low impact fractures of hips (Scheuermann et al., 2018) and wrists are possible presentations that may occur as time compromised bone density increases for 10 years (McCance & Huether, 2018). Pain does not usually occur until a fragility fracture occurs (McCance & Huether, 2018). Kyphosis and loss of height are presentations that may occur as time compromised bone density increases for 10 years (Nutt et al., 2019). A patient may not be screened for osteoporosis until after a fragility fracture has already occurred (Nutt et al., 2019). Osteopenia is not detectable until up to 30% of bone loss has already occurred (Nutt et al., 2019). An increased mortality of 5.8 times during the initial 3 months (Nutt et al., 2019). Increased mortality rates increase as a result of fragility fractures. Hip fractures have a mortality rate of 5-10% during the initial 3 months (Nutt et al., 2019). When estrogen levels are reduced in older women, bone density may decrease, making osteoporosis more likely. Estrogen is thought to be the most essential factor for bone health; estrogen deficiency results in slower bone growth and a reduced bone density. Almost twice as common in women as in men (Takahata-Malay et al., 2017), bone loss may not be detected until up to 30% of bone loss has already occurred (Berry, 2019). Understanding bone: what is osteoporosis?

Bone deformities may occur as disease progresses and integrity of the bone is compromised (McCance & Huether, 2018). Pain does not usually occur until a fragility fracture occurs (McCance & Huether, 2018). Kyphosis and loss of height are presentations that may occur as time compromised bone density increases for 10 years (Nutt et al., 2019). Osteopenia is not detectable until up to 30% of bone loss has already occurred (Nutt et al., 2019). A patient may not be screened for osteoporosis until after a fragility fracture has already occurred (Nutt et al., 2019). The cumulative morbidity and mortality associated with the fractures that result from osteoporosis has a profound impact on the functioning of the body, decreasing quality of life for patients (Nutt et al., 2019). Colles’ fracture in the wrist is considered an early pathologic sign of osteoporosis (Jantzen et al., 2016).