Mary's Story

Mary was born in 1948 in a small rural town in northern Ontario. After finishing grade eight at the local school, she went to work at the local general store to help her family out financially. Jack came into the store once a month when he got paid. Mary and Jack struck up a friendship and later got married. The early years of their marriage were tough. Mary sensed that Jack had many 'ghosts' from his past, which he never spoke of. The few times Mary and Jack went to visit his family, they never felt comfortable or accepted. When she asked Jack about this, he refused to talk about it. So, Mary settled into their marriage and worked hard at making home for her husband and children. They had two children, Phillip and Nancy.

Five years after they got married, Mary and her husband Jack could finally afford to buy their own home. It was a lovely two-story home, with three bedrooms and one bathroom on the second floor. This home was Mary's pride and joy. It was a home with many happy memories for Mary; this is where she raised her children, took care of her husband, and entertained her lady friends from church. Mary was happy in life as a stay-at-home mother and housewife.

The home has a nice big backyard with lots of gardens, which Mary loved to tend over the years. Over the last few years, Mary has been having difficulties with maintaining their home both inside and out. Mary has been slowing down due to joint pain and stiffness. Both of her children have moved far away, and Jack has health issues which affect how much he could help Mary with maintaining their home.

In 2012, Mary went to see her family physician. Her over-the-counter (OTC) medications were no longer relieving her joint pain and stiffness. After a thorough physical examination and some diagnostic tests, Mary was diagnosed with Stage 4 osteoarthritis (OA) and osteoporosis (OP).

Mary's OA was affecting her mobility and her ability to perform basic activities of daily living (ADLs). Jack assisted Mary as much as possible, but was having some difficulties with his own ADLs. Jack would assist Mary downstairs in the morning. Mary wore an incontinent product as she was unable to get up the stairs to the bathroom in time.

Due to Mary's pain (related to OA and OP), her physician prescribed hydrocodone. By 2018, Mary was having increased difficulty with mobility and required a walker to get around. She seldom left the house any more as getting around proved to be a challenge. She missed gardening, going to church, and visiting with her friends. *(Additional information about OA will be provided on PowerPoint)*

In the spring of 2018, she experienced a fall in the bathroom, resulting in a fractured right hip. Surgical intervention, involving a total right hip arthroplasty, was performed. Following hospital discharge, Mary and Jack moved in with her daughter Nancy and her husband Paul in the GTA. Mary's hospital stay was extended due to Jack's hospitalization.

The weeks that followed Mary's discharge and subsequent move to her daughter's, saw Mary become more withdrawn, often spending the day in her pajamas, unwashed, and un-engaged with those around her. Mary was struggling with the many changes happening in her and Jack's life.

One week after her return from the hospital, Mary's behavior persists. She continues to lie in bed and has not attempted to participate in any activities such as interacting with her family, eating during mealtime, or getting up to go to the washroom. One day, as Nancy is changing Mary's

clothing, she notices that Mary has extreme redness on her skin. After taking her to the doctor, it was determined she was developing a stage 1 pressure ulcer on her coccyx area. The nurse let her know that if Mary continues in this cycle, her ulcer can significantly deteriorate in a short period of time. The nurse sends Mary and Nancy home with further instruction for Mary's care.

Mary's medical journey takes an unexpected turn as she confronts a heightened risk of cardiovascular disease (CVD). This stage of a woman's life is even more vulnerable to cardiovascular problems because menopause is linked to a reduction in estrogen, which is considered to be cardioprotective. Mary has an increased risk of cardiovascular disease due to her postmenopausal state. Because of hormonal fluctuations, postmenopausal women are already vulnerable to alterations in cardiovascular health. Gestational diabetes mellitus (GDM) is defined by reduced glucose tolerance that initially appears or is identified during pregnancy. It is a condition when there is an increase in insulin resistance and insufficient regulation of glucose. Mary experienced difficulties controlling her blood sugar levels when this problem first appeared during one of her pregnancies. Studies have shown that women with a history of gestational diabetes are at an elevated risk of developing cardiovascular diseases later in life.

Traditional risk factors include age, gender, family history, hypertension, hyperlipidemia, smoking, physical inactivity, poor diet, obesity, and diabetes mellitus (Type 2). Women are also more susceptible to certain risk factors, such as a history of gestational diabetes during pregnancy and the menopause, which is characterized by a decrease in the cardioprotective hormone estrogen.

Mary visits her doctor to take precautions to maintain her cardiovascular health, realizing that her risk is increased. The doctor evaluates her medical history, considering that she is postmenopausal and that she has had gestational diabetes in the past. Mary's doctor informs her of her elevated risk of CVD, stressing the importance of lifestyle changes, continuous observation, and possible treatments to reduce the risk.

Key words: Bone, Depression , Elder fall , Fractured hip, Hip replacement, Joint, Opioids, Osteoarthritis, Osteoporosis, Stage I Pressure Ulcer, Menopause, Braden Scale, Integumentary/Skin, Therapeutic Drug Monitoring, Gestational Diabetes, Cardiovascular risk

Additional Resources

Ji, & Yu, Q. (2015). Primary osteoporosis in postmenopausal women. Maturitas, 82(3), 315–315. https://doi.org/10.1016/j.maturitas.2015.06.009

Resource for Bone Cell Physiology (3 minute videos)
Postmenopausal Osteoporosisx

Resource Estrogen Physiology

Estrogen & Progesterone Production by Thecal & Granulosa Cells