

# Back Pain: Is It Spinal Cord Compression?

Marcelle Kaplan, RN, MS, AOCN®, CBCN

Back pain is an early and sensitive indicator of metastatic spinal cord compression (MSCC). However, back pain is so common in the general population that its significance as a symptom of advanced, recurrent, or undiagnosed cancer may be overlooked. Any delay in evaluating and initiating treatment for MSCC can result in a true oncologic emergency.

## Case Study

P.K. is a 71-year-old man who was diagnosed nine years ago with stage II prostate cancer with a Gleason score of 6 and treated with a radical prostatectomy. He has been feeling fine and enjoying an active lifestyle until about three weeks ago when he “pulled his back” playing golf and the pain has been “getting worse” ever since. He goes to the oncology clinic for a scheduled visit.

## Patient Assessment

After taking a thorough prostate cancer history (stage at diagnosis, types of treatment, dates of imaging, and biomarker studies), the oncology nurse conducts a baseline pain assessment, asking P.K. questions about the onset, duration, location, pattern, quality, and intensity of his pain; relieving and exacerbating factors; and use and effectiveness of pain medications. P.K. reports that he has had periodic lower back pain throughout his adult life but the recent pain is located higher in his back and is not relieved by lying down. He describes it as a constant, dull ache that fluctuates in intensity between 2–4 on a scale of 1–10 during the day but increases to a 7 when he coughs or sneezes and when he is lying down in bed. He has been taking naproxen with

limited relief. The nurse gently palpates and percusses over the length of P.K.'s vertebrae, making note that he indicates tenderness at the level just below the scapulae. He is asked to walk back and forth a few times and also to stand still with his eyes closed, noting his gait and balance, which appear normal. To assess his leg strength, he is asked to rise from a seated position, which he does with some effort. P.K. reports that his legs often feel heavy but not numb. He needs to rest more often but is able to carry out most of his usual daily activities. His bladder and bowel habits are unchanged. However, based on P.K.'s history of prostate cancer and current reports of back pain, the oncology nurse asks the oncologist to refer P.K. for urgent comprehensive neurologic examination, including sensory, autonomic function, and reflex assessments and imaging studies to differentiate between benign spinal conditions and developing cord compression.

## Etiology of the Problem

MSCC usually is associated with advanced cancer but may be the first sign of the presence of malignant disease. MSCC develops most often when a tumor mass metastatic to vertebral bone or a local cancer expands into the epidural space and compresses the cord. Bone fragments from a collapsed vertebral body also may cause MSCC when they impinge on the spinal cord (Kaplan, 2006; Wilkes, 2004). It commonly is associated with solid

tumors that preferentially metastasize to vertebral bone, particularly cancers of the breast, lung, and prostate, which together account for more than 60 of all cases of MSCC. The cancers are followed in incidence by renal cell carcinoma, non-Hodgkin lymphoma, and multiple myeloma, the most common primary tumor of bone.

The thoracic spine is the most common site of epidural compression; its 12 vertebrae contain the largest volume of bone and active bone marrow (which supports the growth of metastatic deposits) in the spinal column (Kaplan, 2006). Advanced breast and lung cancers typically involve the thoracic vertebrae but may be distributed more widely. The lumbosacral spine follows the thoracic spine in incidence of MSCC. Prostate, kidney, and colon cancers metastatic to bone are associated mostly with cord compression in the lower thoracic or lumbosacral regions. The cervical spine has the lowest incidence of MSCC and is associated with head and neck cancers, lung cancer, and lymphoma (Abraham, 2004; Gabriel & Shiff, 2004; Weinstein, 2002).

The clinical manifestations of MSCC follow a similar pattern in all affected patients. The earliest symptom typically is pain, which if not recognized and treated promptly, will progress to muscle weakness, then to sensory loss, autonomic dysfunction (sphincter disturbance and loss of bladder and bowel control), and finally to irreversible paralysis (Loblaw, Perry, Chambers, &

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Marcelle Kaplan, RN, MS, AOCN®, CBCN, is the breast oncology clinical nurse specialist at Weill Cornell Medical Center at New York Presbyterian Hospital in New York.

Digital Object Identifier: 10.1188/09.CJON.592-595