

## Acute Aortic Dissection Following Treatment for Castration-Resistant Prostate Cancer

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A 65-year-old man presents to the emergency department with increasing back pain. His history includes hypertension, peripheral neuropathy, duodenal ulcer, superior mesenteric vein thrombus, stage IIB colon cancer treated with surgery and adjuvant chemotherapy, renal cell carcinoma treated with surgery, and prostate cancer treated with surgery and radiation. He is otherwise healthy. His family history is positive for colon cancer. Physical examination found significantly elevated blood pressure and a computed tomography scan of the thoracic and lumbar spine was performed, with findings of a type B aortic dissection extending from the aberrant right subclavian artery down to the abdominal aorta.

### Acute Aortic Dissection

The estimated incidence of acute aortic dissection is about 3 in 100,000 per year (Papadopoulos et al., 2015). Aortic dissection begins with a small tear in the lumen of the aorta. As the heart continues to pump blood through the tear, a false channel is created, which may quickly become larger than the aorta itself. If left untreated, death will often occur from a rupture in the aorta (Pyne & Apple, 2013). The most significant risk factors for aortic dissection include hypertension, age (risk increasing with age), and gender (men are at higher risk) (Golledge & Eagle, 2008; Papadopoulos et

al., 2015). Other risk factors include known connective tissue disorders, smoking, direct blunt force trauma, and drug use (e.g., cocaine, amphetamines) (Nienaber & Clough, 2015). Presentation most commonly includes abrupt onset of chest and/or back pain, pulse deficit, and abnormal chest imaging; however, these symptoms are not always present (Pape et al., 2015; Ranasinghe, Strong, Bolland, & Bosner, 2011). Immediate management of aortic dissection includes pain control and antihypertensive therapy with the initial goal of rapid reduction of blood pressure. Additional management is dependent on the type and location of dissection (Golledge & Eagle, 2008; Nienaber & Clough, 2015) (see Table 1).

### Prostate Cancer

Prostate cancer is the most common cancer among men in North America (American Cancer Society, 2016; Canadian Cancer Society, 2015). Worldwide, prostate cancer is the second most frequently diagnosed cancer and the sixth-leading cause of cancer death in males, accounting for 14% (903,500) of the total new cancer cases and 6% (258,400) of the total cancer deaths in males in 2008 (World Cancer Research Fund International, 2014).

The natural history of prostate cancer is extremely variable and is largely dependent on Gleason score, a measure of cell differentiation.