Priapism is low flow (ischemic) or high flow (nonischemic). Low-flow priapism results from decreased penile venous outflow causing stasis and presents as a painful, rigid erection. More common than high-flow priapism, low-flow priapism is a medical emergency because irreversible cell damage and fibrosis can occur if treatment is not initiated within 24–48 hours. Low-flow priapism can be drug induced or caused by hematologic disorders and tumor infiltration (Sadeghi-Nejad et al., 2004). High-flow priapism results from increased arterial inflow into the cavernosal sinusoids, which overwhelms venous outflow. Clinical presentation is painless erection; irreversible cellular damage and fibrosis are rare. High-flow priapism often is the result of penile or perineum trauma and is not an emergency because treatment is elective (Sadeghi-Nejad et al., 2004).

Hyperleukocytosis causes priapism in patients with leukemia. Hyperleukocytosis can occur as a result of mechanical pressure on the abdominal veins by splenomegaly, causing venous congestion of the corpora cavernosa, sludging of leukemic cells in the corpora cavernosa and dorsal veins of the penis, infiltration of the sacral nerves with leukemic cells, or infiltration of the central venous system with leukemic cells (Chang et al., 2003).

Signs and Symptoms

Signs and symptoms vary based on whether the patient is experiencing low-flow or high-flow priapism. Obtaining a physical examination and medical history is essential. The examination should include a review of the patient’s medications, as some drugs can cause priapism. Laboratory studies should be performed to determine the cause of priapism. The evaluation should include a complete blood count, clotting studies, and arterial blood gas analysis.

Definition

Priapism is defined as a persistent painful erection lasting more than 2 hours. It is a medical emergency that requires prompt treatment. Priapism is classified as either low-flow or high-flow, depending on the cause and mechanism. Low-flow priapism is caused by decreased venous outflow, while high-flow priapism is caused by increased arterial inflow.

Case Study: N.L. is a 20-year-old Caucasian man with no significant medical history. He presented to the hospital with a two-day history of feeling ill with intermittent nausea, vomiting, blurred vision, and headache. He also noted slurred speech and left-upper-quadrant fullness for almost a month.