# Surgical Management of Testicular Cancer

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Surgery is an integral component in the management of testicular cancer. Prior to the advent of cisplatin chemotherapy, a retroperitoneal lymph node dissection (RPLND) was the only chance for cure of testicular cancer. Over the years, the surgical techniques have been improved greatly to decrease the occurrence of complications (e.g., incidence of retrograde ejaculation). Currently, RPLND can be done as the initial therapy or after chemotherapy. In either situation, the postoperative management of patients with testicular cancer can be complicated and requires thorough, ongoing assessment. This article presents the surgical indications for RPLND and the nursing management.

**Key Words:** testicular neoplasms, lymph node excision, germ cell

Testicular cancer is a rare disease and accounts for 1% of all cancers that occur in men. However, it is the most common solid tumor affecting men aged 15–35 (Poirier & Rawl, 2000). An estimated 7,600 new cases and 400 deaths from testicular cancer occurred in 2003 (Jemal et al., 2003). Worldwide, the rate of testicular cancer has increased since the 1960s, with the environment being the blamed causative factor for the increase (Huyghe, Matsuda, & Thonneau, 2003). The incidence varies geographically; the highest numbers of men diagnosed live in Scandinavia, Switzerland, Germany, and New Zealand; intermediate incidence is found in the United States and Great Britain; and the disease is almost nonexistent in Africa and Asia (Bosl & Motzer, 1997). In the 1970s, testicular cancer accounted for 11.4% of all male deaths from cancer, with a 64% overall survival rate in men aged 25–34. Presently, the cure rate for early-stage testicular cancer is close to 100% (Steele & Richie, 1997). This improvement in survival is attributed to cisplatin-containing combination chemotherapy, surgery, advent of and improvements in computed tomography (CT) scans, and tumor markers (Sheinfeld, 2002).

The surgical management of testicular cancer is an integral component in the treatment of this disease. A radical orchiectomy will provide a pathologic diagnosis and local control. Retroperitoneal lymph node dissection (RPLND) has an important role in the management of early- and late-stage disease (Steele & Richie, 1997). This article will discuss the surgical indications for primary and postchemotherapy RPLND and the nursing management of patients receiving this treatment.

## Etiology

The etiology of testicular cancer is unknown; however, several factors have been associated with an increased risk of developing testicular cancer. Approximately 7%–10% of men with testicular cancer have a history of a cryptorchid testis (Richie, 1998). The risk of developing a testicular tumor (germ cell origin) is 10- to 40-fold higher in a cryptorchid testis, and 12% of all germ cell tumors arise in a cryptorchid testis (Small & Torti, 1995). However, 5%–10% of men with a history of a cryptorchidism develop a tumor in a contralateral, normally descended testis (Richie). If orchiopexy is done prior to puberty, the risk of developing a testicular tumor is reduced (Bosl, Bajorin, Sheinfeld, Motzer, & Chaganti, 2001). Patients with Klinefelter syndrome, an abnormality of chromosome 47 (XXY), have an increased risk of developing a germ cell tumor in the mediastinum (Bosl & Motzer, 1997).

Testicular cancers are slightly more common in the right testicle than the left, which parallels the slightly higher incidence of right-sided cryptorchidism (Richie, 1998). Men previously diagnosed with a testicular tumor have a 1%–2% chance of developing a testicular cancer in the contralateral testicle (Poirier & Rawl, 2000). The histologic type usually is similar and can occur simultaneously or successively. Therefore, testicular self-examination should be included during educational sessions and follow-up with men who have a history of testicular cancer.

## Pathology

Cancer of the testes can originate from a germ cell, stromal cell, or nongerm cell. This article will focus on a discussion of the surgical treatment of the testicular germ cell tumor. Germ cell tumors (GCTs) are classified by two histologic types: seminoma and nonseminoma (NSGCT). Patients can be diagnosed with a mixed GCT, which consists of seminoma and embryonal or choriocarcinoma. Although these tumors have a seminomatous component, they are treated like NSGCT because of the aggressiveness of the embryonal or choriocarcinoma component (see Table 1).

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