

Surgical Approaches in the Treatment of Testicular Cancer

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DESCRIPTION

Testicular cancer is one of the most treatable solid malignancies, particularly when detected at an early stage. It primarily affects younger men, often between the ages of 15 and 40, and commonly presents as a painless testicular mass or swelling. Early recognition and timely intervention are critical in achieving favorable outcomes. Surgical management plays a central role in both diagnosis and treatment, forming the foundation upon which additional therapies may be applied when necessary.

The initial step in managing suspected testicular cancer is radical inguinal orchiectomy. This procedure involves removal of the affected testis through an incision in the groin rather than the scrotum, which helps prevent potential spread of malignant cells. It provides definitive histological diagnosis and allows for accurate staging of the disease. The operation is generally well tolerated, and most patients recover quickly with minimal complications.

Testicular cancers are broadly categorized into seminomas and non-seminomatous germ cell tumors, each with distinct biological behavior and treatment considerations. In many early-stage cases, surveillance may be recommended after surgery, involving regular imaging and tumor marker assessments to monitor for recurrence. This approach avoids overtreatment while ensuring early detection of any disease progression.

For patients with evidence of metastatic spread, additional surgical intervention may be required. Retroperitoneal lymph node dissection is a procedure used to remove lymphatic tissue in the abdomen where testicular cancer commonly spreads. This operation serves both therapeutic and staging purposes, particularly in non-seminomatous tumors. Advances in surgical technique have allowed for nerve-sparing approaches, which help preserve ejaculation and reduce long-term complications.

Minimally invasive techniques, including laparoscopic and robotic-assisted retroperitoneal lymph node dissection, have been introduced in selected centers. These approaches aim to reduce postoperative pain, shorten hospital stays, and improve recovery time. However, they require significant expertise and careful

patient selection to ensure outcomes comparable to traditional open surgery.

Preservation of fertility is an important consideration in the management of testicular cancer, given the young age of many patients. Prior to surgery, sperm banking is often discussed as an option, particularly if additional treatments such as chemotherapy or radiation are anticipated. While removal of one testis does not necessarily result in infertility, overall reproductive potential may be affected depending on individual factors and subsequent therapies.

Hormonal function is another aspect that requires attention. The remaining testis typically compensates for the loss of the removed gland, maintaining adequate testosterone levels. However, some patients may experience hormonal imbalance and require monitoring or supplementation. Symptoms such as fatigue, reduced libido, and mood changes should be evaluated in the postoperative period.

Training and experience are essential for surgeons performing procedures such as retroperitoneal lymph node dissection. The complexity of the anatomy and the need for precision highlight the importance of specialized expertise. High-volume centers often report better outcomes, emphasizing the value of referral to experienced teams when appropriate.

CONCLUSION

Surgical approaches remain fundamental in the treatment of testicular cancer, from initial diagnosis to management of advanced disease. A combination of established techniques and evolving minimally invasive methods provides a range of options tailored to individual patient needs. Healthcare providers play a key role in disseminating this information and reducing stigma associated with the condition. Public awareness and education about testicular cancer are important in promoting early detection. With continued advancements and comprehensive care, outcomes for patients with testicular cancer continue to improve significantly.

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Received: 18-Aug-2025, Manuscript No. MSU-25-41441 **Editor assigned:** 20-Aug-2025, PreQC No. MSU-25-41441 (PQ); **Reviewed:** 05-Sep-2025, QC No. MSU-25-41441; **Revised:** 10-Sep-2025, Manuscript No. MSU-25-41441 (R); **Published:** 17-Sep-2025, DOI: 10.35248/2168-9857.25.14.403

Citation: Silva M (2025). Surgical Approaches in the Treatment of Testicular Cancer. Med Surg Urol.14:403.

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