

# Principles of surgical oncology: Tumour resection and beyond.

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## Introduction

Surgical oncology plays a crucial role in the multidisciplinary management of cancer. The primary goal of surgical intervention is the complete resection of the tumour, aiming for curative intent whenever possible. This article explores the principles of surgical oncology, focusing on tumour resection and the broader aspects of surgical management in cancer care. The success of surgical oncology relies on a comprehensive preoperative assessment of the patient and the tumour. This includes evaluating the patient's general health status, assessing tumour characteristics, and determining the extent of local and distant disease. A multidisciplinary approach involving surgeons, radiologists, pathologists, and other specialists helps in formulating a tailored surgical plan. The choice of surgical technique depends on various factors such as tumour type, location, size, and stage. Traditional open surgery remains the gold standard for many cancer types, allowing direct visualization and access to the tumour. However, minimally invasive techniques, such as laparoscopy and robotic surgery, have gained popularity due to their advantages, including smaller incisions, reduced blood loss, faster recovery, and improved cosmetic [1].

In some cases, a radical or extended resection may be necessary to achieve optimal tumour control. This involves removing not only the primary tumour but also adjacent structures, lymph nodes, or metastatic deposits. Radical surgeries are commonly performed in cancers such as breast, head and neck, gastrointestinal, and gynaecological malignancies, aiming to eradicate the tumour and prevent its spread [2]. Accurate margin assessment during tumour resection is crucial to ensure complete tumour removal. Intraoperative frozen section analysis helps determine the presence of tumour cells at the surgical margins, guiding the surgeon to perform additional resection if necessary. Achieving negative margins minimizes the risk of local recurrence and improves overall outcomes [3].

Lymph node involvement is a critical aspect of cancer staging and prognosis. In many cancer types, lymph node dissection is performed to evaluate the spread of cancer cells beyond the primary tumour site. The extent of lymph node dissection varies depending on the tumour type and stage, and it plays a crucial role in determining the need for adjuvant therapies. In select cases, Sentinel Lymph Node Biopsy (SLNB) is performed to identify the first lymph node(s) to which cancer cells are likely to spread. It helps in accurately staging

the tumor and assessing the need for further lymph node dissection. SLNB has revolutionized the surgical management of breast cancer and melanoma, reducing the extent of lymph node surgery while maintaining diagnostic accuracy. Surgery alone may not be sufficient for optimal cancer management. Adjuvant therapies, such as chemotherapy, radiation therapy, and targeted therapy, are often administered after surgery to eliminate residual disease, target micro metastases, and reduce the risk of recurrence. Neoadjuvant therapies, given before surgery, aim to shrink tumours, increase respectability, and improve surgical outcomes [4].

In advanced or metastatic cancer, surgical intervention may be performed with palliative intent to alleviate symptoms, improve quality of life, and provide local tumour control. Palliative surgeries focus on relieving pain, restoring organ function, preventing complications, and improving overall well-being in patients with advanced disease. Surgical oncology is a team effort that involves close collaboration among surgeons, medical oncologists, radiation oncologists, radiologists, pathologists, and other healthcare professionals [5].

## Conclusion

In conclusion, the principles of surgical oncology are integral to the comprehensive management of cancer. Surgical intervention plays a crucial role in tumour resection, aiming for curative intent whenever possible. The success of surgical oncology relies on a thorough preoperative assessment, meticulous planning, and a multidisciplinary approach involving various specialists. Surgical techniques for tumour resection have evolved, with minimally invasive approaches gaining popularity due to their advantages such as smaller incisions, reduced blood loss, and faster recovery. Radical and extended resections may be necessary in certain cases to achieve optimal tumour control, involving the removal of adjacent structures, lymph nodes, or metastatic deposits. Margin assessment and frozen section analysis are essential to ensure complete tumour removal and minimize the risk of local recurrence. Lymph node dissection helps in staging and determining the need for adjuvant therapies. Sentinel lymph node biopsy has revolutionized the surgical management of certain cancers, reducing the extent of lymph node surgery while maintaining diagnostic accuracy.

## References

1. Cady B. Basic principles in surgical oncology. *Arch Surg*. 1997;132(4):338-46.

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2. Soderstrom MJ, Gilson SD. Principles of surgical oncology. *Vet Clin.* 1995;25(1):97-110.
3. Zbar AP, Gravitz A, Audisio RA. Principles of surgical oncology in the elderly. *Clin Geriatr Med.* 2012;28(1):51-71.
4. Culp WT, Ehrhart N. Principles of Surgical Oncology. *Vet Oncol.* 2022;29:1-6.
5. Are C, Berman RS, Wyld L, et al. Global curriculum in surgical oncology. *Ann Surg Oncol.* 2016;23:1782-95.