

# Anesthesia challenges in cancer patients

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# Onco-anaesthesiology as an emerging sub-speciality domain: Need of the hour!

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**The challenges of the  
onco- anesthesia  
professionals  
are how to manage  
cancer patients  
effectively and safely**



# Anesthesia touch

**Need for specialized perioperative anesthesia care of cancer patients**





## Cancer Management and Research

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# Anesthetic Strategies in Oncological Surgery: Not Only a Simple Sleep, but Also Impact on Immunosuppression and Cancer Recurrence

Federico Longhini, Andrea Bruni, Eugenio Garofalo, Rosalba De Sarro,  
Riccardo Memeo, Paolo Navalesi, Giuseppe Navarra, Girolamo Ranieri,  
Giuseppe Currò & Michele Ammendola

# Anesthesia and cancer recurrence: an overview

Etrusca Brogi  & Francesco  
Forfori

Journal of Anesthesia,  
Analgesia and Critical Care **2,**

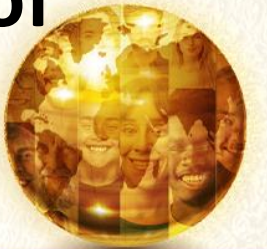


**We must avoid  
anesthetic techniques  
leading to perioperative  
immune suppression  
and increased risk  
of cancer recurrence**



# How anesthesia affects malignancy??

Although sometimes conflicting data have been published, anesthetic drugs may play a major role in the **immunomodulation and cancer recurrence**. Since the evidence is not completely clear to data, future studies are needed to clarify the role of anesthesia in **immunomodulation and cancer recurrence** in patients undergoing elective oncolo-logical surgery for different types of cancer





## Case scenario

25 years old male patient , osteosarcoma

left femur ,previous desarticulation on same side

Recurrence of the tumor occurred after 5 cycles of  
Chemotherapy that operating now for resection of recurrence

EF 30% ,bad cardiac function from

adryamicin therapy making anesthesia

challenging for the patient.



- The onco anesthesiologists must consider a specific anesthesia approach in cancer patients undergoing Chemotherapy



## **Anesthesia recommendations:**

- the patient is cardiologicallyun stable with high risk of general anesthesia**
- high risk consent is mandatory**
- post operative ICU bed reservation**
- avoid volume overload during operation**
- correction of anemia before operation ( Hb 8,6gm/dl)**



## Our Anesthesia plan:

**-Narcotic based general anesthesia for bad cardiac function with full invasive CVS monitoring  
)Invasive bl.pr&CVP(**



# Preoperative anesthesia assessment

**Psychological**  
**Chemotherapy**  
**radiotherapy**  
**Pain management**



- **Red devil chemo**
- **Adriamycin(Doxorubicin)**
- **Cardiac toxicity up to**
- **acute left Ventricular failure**
- **refractory to inotropes**



- Bleomycin induced lung injury especially with high O<sub>2</sub> concentrations
- It is recommended to reduce perioperative O<sub>2</sub> concentrations



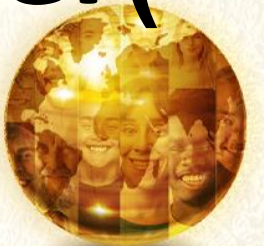
# Other chemotherapeutic toxicities :

..Renal (cisplatinum)

..Hepatic (cyclophosphamide)

..CNS (vincristine)

..Hematology (Bone marrow disorder)





# Radiotherapy and anesthesia

## Common Radiation Sites & Side Effects

### Brain

**Acute & Chronic**  
 Fatigue  
 Memory loss

### Breast

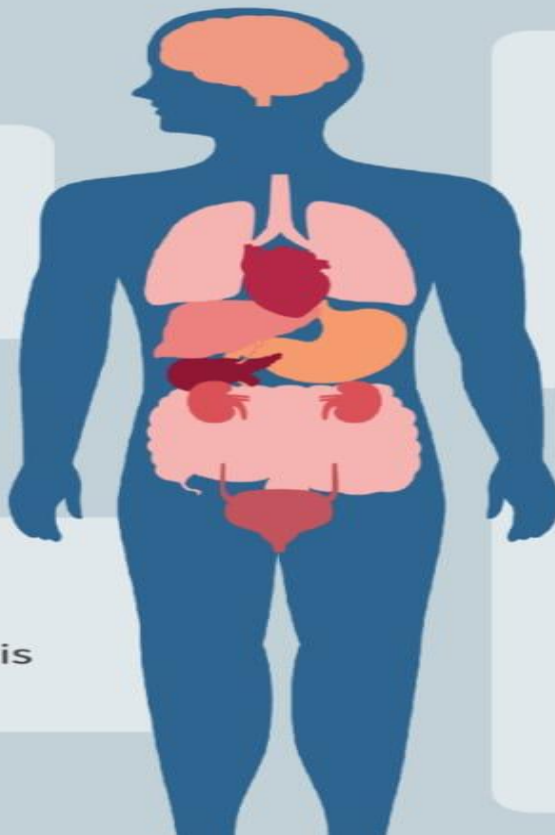
<b>Acute</b> Dermatitis	<b>Chronic</b> Scarring and fibrosis
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### Lung

<b>Acute</b> Pneumonitis  Esophagitis  Acute pericarditis	<b>Chronic</b> Pulmonary fibrosis Esophageal strictures Myocardial fibrosis
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### Abdomen/Pelvis

<b>Acute</b> Enteritis Proctitis Colitis Cystitis	<b>Chronic</b> Strictures Fistulas Detrurator dysfunction
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CASE REPORT

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# Radiation induced changes in the airway - anaesthetic implications

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**Renju Kuriakose, MD,** Assistant Professor in Anaesthesiology, Regional Cancer Centre, Trivandrum, Kerala, India

**Rachel Cherian Koshy, MD,** Associate Professor in Anaesthesiology, Regional Cancer Centre, Trivandrum, Kerala

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**Summary:** Radiation induces a variety of changes in the airway that can potentially lead to difficult intubation. Osteoradionecrosis (ORN) of the mandible, a severe consequence of radiotherapy for head and neck malignancies can cause a reduction of the 'mandibular space' and alteration of the morphometric measurements, viz. thyromental distance, hyomandibular distance, anterior mandibular length and posterior mandibular length, that usually predict difficult intubation. A case of osteoradionecrosis of the mandible presenting for elective surgery under general anaesthesia is presented. The primary intention of this article is to focus awareness amongst anaesthesiologists on the myriad of airway problems to be anticipated in cancer patients who present for surgery after radiotherapy.

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**Keywords:** Difficult airway, Predictors, Mandible, Radiation

**radiation induces a variety of changes in the airway that can potentially lead to difficult intubation**



# Paraneoplastic syndrome

Malignant cells generate autoantibodies, cytokines, hormones, or peptides that affect multiple organ systems

## Endocrine Paraneoplastic Syndromes

Ectopic Cushing's syndrome

Ectopic acromegaly

Hypoglycaemia associated with extra-pancreatic tumours



**Neurological Paraneoplastic Syndromes**

Paraneoplastic cerebellar degeneration

Limbic encephalitis

Necrotizing myelopathy

**Haematological Paraneoplastic  
Syndromes**

Eosinophilia

Thrombocytosis

Disseminated intravascular coagulation



# tumor lysis syndrome

It occurs when tumor cells release their contents into the bloodstream, either spontaneously or in response to therapy, leading to the characteristic findings of **hyperuricemia, hyperkalemia, hyperphosphatemia, and hypocalcemia**

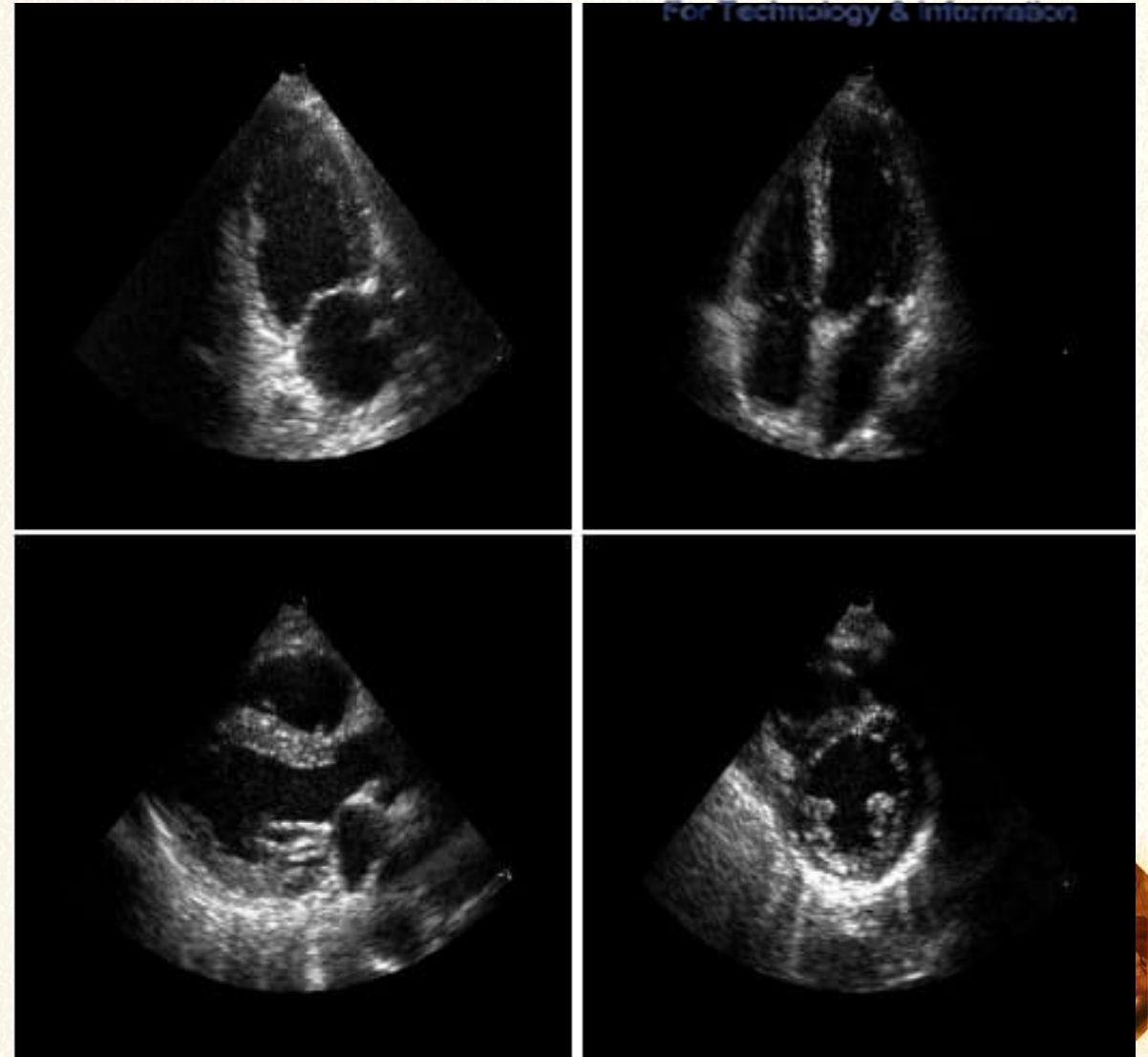


**Introperative monitoring  
) targeted interventions:(  
.In hemodynamically stab  
patients:  
Pulse oximeter, ETco,ECG,blood  
pressure, temperature probe.**



# In hemodynamically Unstable patients

- .invasive blood pressure monitoring and blood gas analysis
- .central venous catheter
- .POCUS point of care ultrasound as echo and lung US
- ) assessment of cardiorespiratory functions and fluid balance(





# Infection control and antibiotic prophylaxis is crucial for immunocompromised cancer patients



## Hypothermia:

Due to age, prolonged anesthetic and surgery.

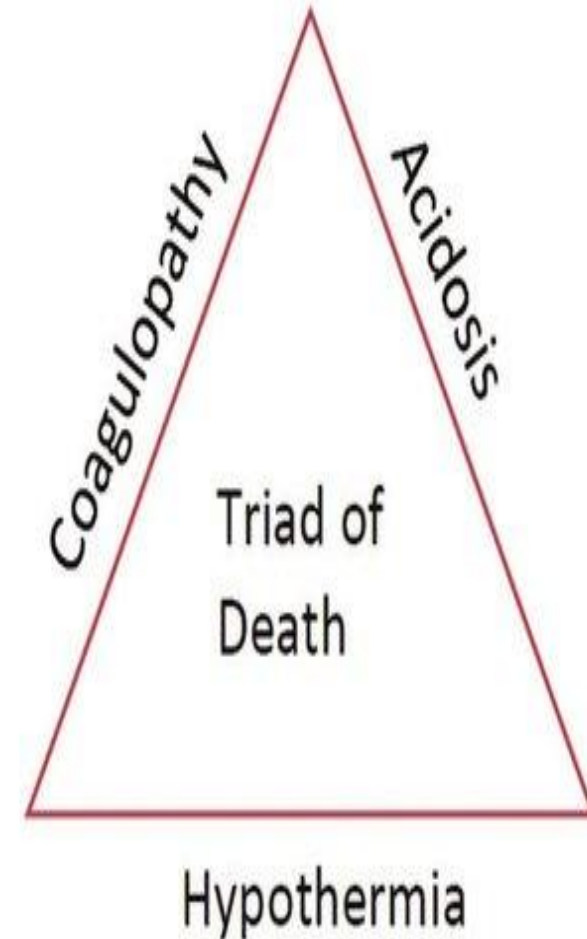
Complications;

- .Immune dysfunction and cancer recurrence

- .lethal diamond

- .shivering and

- increased O<sub>2</sub> consumption.



**Patient position  
and Peripheral nerve injury:  
Appropriate patient positionin  
and  
padding can prevent periphera  
nerve  
injuries of the upper and lowe  
extremities.**



# Multimodel analgesic approach to fight against the compound effect of perioperative pain and existing pain due to malignancy

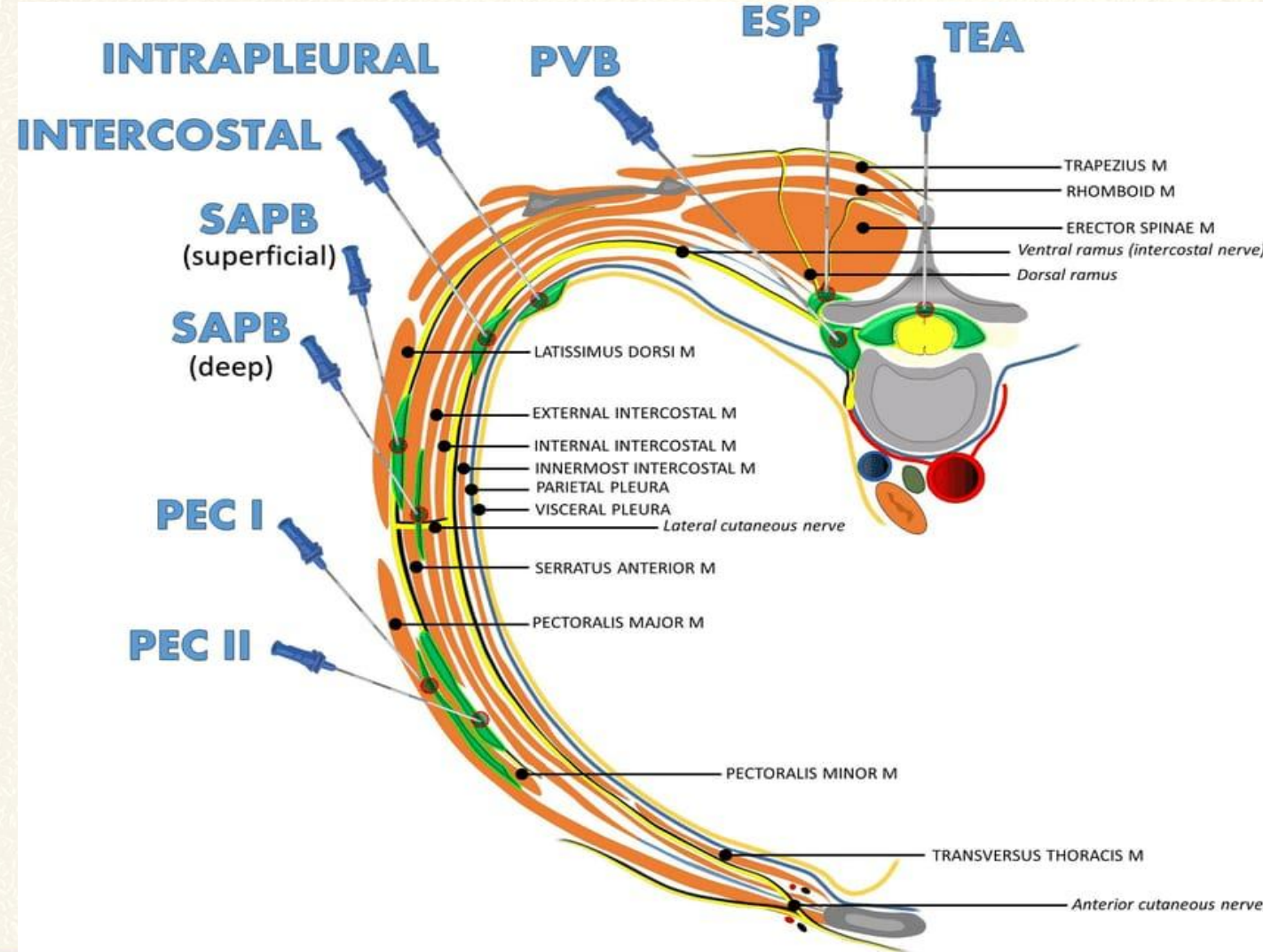


# Cancer pain

Mild pain ....NSAIDS  
and acetaminophen

Moderate to severe  
.....opioid analgesia  
but fear of addiction

Facial nerve block  
for thoracic and  
abdominal surgeries



## Psychology rehabilitation

for cancer patients is a crucial aspect of their overall care. It focuses on addressing the emotional, social, and psychological challenges that come with a cancer diagnosis and treatment. This type of rehabilitation aims to improve the patient's quality of life, alleviate distress, and enhance their ability to cope with the disease.



## What is Cancer Rehabilitation?

Cancer rehabilitation, also known as cancer rehab, is a supportive healthcare program that helps patients with physical, mobility, and cognitive problems caused by cancer and its treatment. The goals of cancer rehab are to:

- ...Help patients stay as active as possible and participate in family, work, and other life roles
- ...Lessen the side effects and symptoms of cancer and its treatment
- ...Help patients stay as independent as possible
- ...Improve their quality of life



## Take a home message

**Challenges faced by onco anesthesia in safely managing cancer patients are diverse and complex.**

**Considerations of the risks between anesthesia and antineoplastic regimens must be taken to ensure best quality of care.**







Prayers  
and Well-Wishes  
for Someone  
Who Has Cancer

