REVIEW PAPER

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Challenges and pitfalls in the perioperative management of mediastinal mass syndrome: an up-to-date review

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Abstract

The perioperative management of patients undergoing mediastinal mass operations presents a persistent challenge across multiple clinical specialties. General anesthesia administration further increases the risk of perioperative cardiorespiratory decompensation. The interdisciplinary team plays a crucial role in ensuring a safe perioperative period. However, due to the rarity and variability of mediastinal mass syndromes, specific management protocols are lacking. This review aims to outline the multitude of challenges and pitfalls encountered during perioperative management in patients with the mediastinal mass syndrome. We describe diagnostic evaluation, preoperative optimization, intraoperative considerations, and postoperative care strategies, emphasizing the paramount significance of a multidisciplinary approach and personalized treatment plans. Preoperative multidisciplinary discussions, meticulous anesthetic management, and well-established protocols for emergency situations are pivotal to ensuring patient safety. Healthcare providers involved in the care of patients with mediastinal mass syndrome must grasp these challenges and pitfalls, enabling them to deliver safe and effective perioperative management.

Key words: complications, anesthetic management, airway obstruction, perioperative management, pitfalls, mediastinal mass syndrome.

Introduction

The mediastinum, an intricate anatomical region within the thoracic cavity, harbors a diverse array of both benign and malignant masses. These masses give rise to a complex set of symptoms and clinical manifestations collectively referred to as mediastinal mass syndrome (MMS). Managing patients with MMS during the perioperative period presents unique and formidable challenges, including the potential for airway obstruction, hemodynamic instability, and compromised respiratory function.

Mediastinal masses have long been a source of concern, even for highly skilled specialists in this field [1]. This particular patient population poses a distinctive set of challenges, which remain a focal point for the multidisciplinary team responsible for their care. It is important to recognize that mediastinal tumors do not form a homogeneous group; instead, they exhibit variations in their nature, clinical progression, size, and spatial distribution [2, 3]. As a consequence, a wide range of symptoms may manifest. The response of the cardiovascular and respiratory systems to anesthesia can vary considerably depending on the specific alterations induced by the tumor within the mediastinum [3].

Insufficient preoperative evaluation and preparation, combined with inappropriate selection of anesthetic tech-

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Table I. The most common tumors of the mediastinum according to their anatomical localization

Anterior mediastinum	Middle mediastinum	Posterior mediastinum
Thymoma	Parathyroid adenoma	Neurogenic tumors:
Thymic carcinoma	Bronchogenic cyst	• Neuroblastoma
Thymolipoma	Bronchogenic tumor	• Ganglioneuroma
Thymic cyst	Tracheal tumors	• Schwannoma
Hodgkin's lymphoma	Pericardial cyst	• Neurofibroma
Non-Hodgkin's lymphoma	Lymphoma	• Paraganglioma
Germ cell tumors	Metastatic lung cancer	• Neurosarcoma
Teratoma		Neuroendocrine tumors
Thyroid Goiter		Esophageal tumor
Angiomatous tumors		Esophageal diverticula
Lipoma		Gastroenteric cysts
Fibroma/sarcoma		Thoracic spine lesions

niques, have the potential to rapidly escalate into life-threatening situations. While it is imperative to tailor management strategies to each individual case, this article aims to comprehensively address the key issues surrounding the management of patients with mediastinal masses. By exploring the challenges encountered throughout the perioperative period and elucidating common pitfalls, we endeavor to navigate these intricate complexities and ensure optimal patient outcomes.

Mediastinal mass syndrome

The term mediastinal mass syndrome (MMS), coined by Bittar in the 1970s [4], encompasses clinical manifestations caused by the presence of a mediastinal mass in anesthetized patients. MMS can occur intraoperatively or immediately postoperatively, leading to acute cardiopulmonary decompensation [5]. Table I presents the common anatomical locations of mediastinal tumors.

Symptoms of MMS vary from asymptomatic cases to life-threatening cardiopulmonary impairments, depending on tumor size, extent, and impact on adjacent structures [5]. Tumor compression of the trachea or main bronchi results in respiratory failure [6]. Patient positioning and positive pressure ventilation during general anesthesia can worsen airway pressure, making ventilation challenging [5].

Factors contributing to increased airway pressure include patient positioning, such as the supine position, which reduces thoracic diameter and displaces the diaphragm upward. This decreases cross-sectional area (CSA) and increases external pressure on the airway. Central blood volume expansion can also increase tumor size due to improved perfusion [1, 3, 7].

During anesthesia induction, factors such as lung volume reduction, decreased smooth muscle tone in larger airways, diaphragmatic paralysis, loss of chest muscle tone, and controlled ventilation without spontaneous breathing contribute to respiratory complications [3, 7]. These complications include decreased tracheobronchial diameter, increased airway compressibility, elimination of transpleural pressure gradient, loss of airway structural support, preferential ventilation of poorly perfused lung segments, resulting in atelectasis, ventilation-perfusion mismatch, and increased shunt formation [8–10]. Postoperatively, airway obstruction can occur due to surgical complications or tissue edema, especially in patients with incomplete recovery or postoperative pain [1, 3, 7].

Hemodynamic decompensation may arise from compression of the heart, great vessels (pulmonary artery, superior vena cava), or pericardial effusion caused by mediastinal masses [11]. Compression can lead to cardiac rhythm disturbances, syncope, reduced pulmonary blood flow, and compromised venous return. General anesthesia administration may unmask symptoms, and large tumors can directly impinge on the heart, causing arrhythmias or low cardiac output [3, 7].

Diagnostic evaluation

Patients with mediastinal tumors may require diagnostic or therapeutic surgical procedures, necessitating preoperative evaluation through clinical assessment and radiological studies. Accurate diagnosis and characterization of mediastinal masses play a crucial role in perioperative management. We examine the essential imaging techniques, including computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET), emphasizing their strengths and limitations. Furthermore, we underscore the significance of tissue sampling through biopsy or fine-needle aspiration and highlight the importance of comprehensive histopathological analysis to inform treatment decisions.

Clinical evaluation

Patients may exhibit a range of signs and symptoms associated with mediastinal tumors, such as cough, dyspnea, chest pain, superior vena cava obstruction, syncope, or dysphagia. However, some patients may be asymptomatic [1]. Certain indicators should alert anesthesiologists and surgeons to an increased perioperative risk, including worsening dyspnea or cough in the supine position and

Table II. Grading scale for symptoms in patients with mediastinal mass syndrome

Severity grade	Symptoms in supine position
Asymptomatic	The patient can lie supine without symptoms
Mild	The patient can lie supine with some cough/pressure sensation
Moderate	The patient can lie supine for short periods but not indefinitely
Severe	The patient cannot tolerate the supine position

Table III. Shamberger risk assessment box

Group	PEFR	Tracheal CSA (% of predicted)	Anesthetic technique
A (moderate risk)	> 50%,	< 50%	LA/GA spontaneous ventilation, avoid muscle relaxation
B (low risk)	> 50%	> 50%	GA
C (high risk)	< 50%	< 50%	LA only
D (moderate risk)	< 50%	> 50%	LA/GA spontaneous ventilation, avoid muscle relaxation

PEFR – peak expiratory flow rate, CSA – cross sectional area, LA – local anesthesia, GA – general anesthesia.

syncopal symptoms. These signs and symptoms can be categorized into three groups based on their occurrence and severity, as outlined in Table II [3, 10, 12, 13]. Mild to moderate cardiopulmonary symptoms include cough, dyspnea on exertion, chest pain, fatigue, and vocal cord paralysis. Severe cardiorespiratory manifestations include orthopnea, stridor, cyanosis, jugular vein distension, and superior vena cava syndrome [1]. Nonetheless, it is crucial to recognize that even patients without preoperative symptoms can experience serious complications.

Paraclinical evaluation and imaging

CT has emerged as the primary imaging modality for mediastinal mass evaluation, surpassing chest radiographs, by providing precise tumor size and location information, as well as accurate airway diameter measurements [14]. A CT technique, derived from King *et al.*, allows effective assessment of tracheal compression by analyzing the narrowest cross-sectional area (CSA) of the trachea, devoid of extrinsic compression or endoluminal involvement [1, 15]. Significant tracheal compression is typically defined as a reduction exceeding 50% in CSA [1, 16, 17], which serves as a valuable parameter for predicting perioperative respiratory complications during general anesthesia [3].

While CT scanning excels in anatomical delineation, MRI demonstrates superior sensitivity in differentiating soft tissues and defining tissue boundaries [7]. Fluorodeoxyglucose positron emission tomography (FDG-PET) plays an increasingly important role in diagnosing, staging, and assessing prognosis of mediastinal tumors [11], but its contribution to anatomical evaluation of the mediastinum is limited.

Dynamic examination techniques offer insights into potential respiratory decompensation and positional effects during anesthesia. Pulmonary function testing, encompassing forced vital capacity (FVC), forced expiratory volume in 1 s (FEV_1), peak expiratory flow rate (PEFR), and lung volume measurements via body plethysmography, aids in assessing lung function [1]. Abnormal lung function test results are classified as obstructive, restrictive, or mixed, based on criteria such as FEV_1 less than 80% predicted with a FEV_1 : FVC ratio less than 70% for obstructive abnormality and total lung capacity less than 85% predicted for restrictive abnormality [1].

PEFR offers insights into the central airway diameter. A reduction of 50% or more in predicted PEFR in the supine position is associated with anesthetic complications. Shamberger developed a risk assessment box (Table III) to aid in selecting the most appropriate anesthetic technique [16, 18]. Flow-volume loops, commonly used in preoperative evaluations of anterior mediastinal masses [19], exhibit limited correlation with the degree of airway obstruction, challenging their utility in clinical practice beyond chest imaging [9].

Flexible bronchoscopy is highly valuable for evaluating external compression or endoluminal involvement of the tracheobronchial tree [1]. Transthoracic echocardiography is recommended when cardiovascular involvement or hemodynamic compromise is suspected based on clinical examination or CT scan findings [20]. This modality provides additional insights into pulmonary and systemic vascular compression, as well as cardiac structural and functional alterations, guiding anesthesia and surgical decision-making [7].

Anesthetic management

Several authors have proposed anesthetic management recommendations for patients with mediastinal masses undergoing surgery [7]. These include avoiding general anesthesia, particularly paralytic agents, and prioritizing spontaneous ventilation (SV) [7, 21]. A consensus exists on implementing stepwise induction and avoiding deep sedation [22].

It is agreed that no single agent is superior, and the cautious use of any agent should consider maintaining SV [7]. Slow administration of propofol can sustain spontaneous respiration [23], but its combination with remifentanil may increase $PaCO_2$ levels [24]. Frawley *et al.* [25] observed a lower incidence of respiratory depression with ketamine alone or in combination with low-dose midazolam. Abdel-

Table IV. Risk classification for mediastinal mass syndrome

Risk level	Patient characteristics
Safe	Asymptomatic adults (CT and dynamic evaluation with negative results)
Unsafe	Symptomatic adults (clinical signs present and positive diagnostic evaluation)
Uncertain	Adults with moderate clinical symptoms Asymptomatic adults, obstruction of the tracheobronchial tree (CT tracheal/bronchial diameter < 50% of normal) Asymptomatic adults with abnormal dynamic evaluation Adults without the possibility of diagnostic evaluation

malak *et al.* [26] concluded that dexmedetomidine maintenance could reduce the risk of complete airway obstruction in managing mediastinal masses.

An individualized perioperative care plan should be developed for each patient, considering clinical, radiographic, and other available data [3]. This plan should involve a multidisciplinary approach, including anesthesiologists, surgeons, and intensivists. In selected cases, involvement of oncologists, radiation oncologists, or interventional radiologists may be important [3].

Neoadjuvant therapy significantly reduces tumor mass and infiltration, potentially enabling resectability in initially inoperable cases or facilitating surgical resection [11]. Considering irradiation and chemotherapy can reduce tumor size and perioperative complications [9].

Although precise risk assessment for perioperative complications remains challenging, stratifying patients into broad risk categories (Table IV) based on the modified classification by Erdös and Tzanova [3] is reasonable. The guiding principle when anesthetizing patients with mediastinal masses is "noli pontes ignii consumere" (don't burn your bridges) [8]. In high-risk patients classified as unsafe, anticipating decompensation after anesthesia induction is crucial, and the availability of extracorporeal circulation should always be considered [7].

Management approaches for patients with mediastinal masses vary based on whether they undergo diagnostic or therapeutic procedures. Diagnostic procedures such as CT-guided needle biopsy are preferably done using local or regional anesthesia to mitigate risks associated with general anesthesia [1, 3, 7]. If general anesthesia is necessary, a comprehensive plan should be discussed with the surgical team in advance (Table V) [27].

Before inducing general anesthesia, the airway should be assessed with fiber-optic bronchoscopy using topical anesthesia. An armored endotracheal tube should be used, and intubation follows the bronchoscopic examination [1, 7]. General anesthesia induction should be performed with the patient in a semi-Fowler position, allowing for quick position changes if required [1, 7].

Maintaining spontaneous breathing is preferable during the procedure, and muscle relaxants should be minimized whenever possible [8, 28]. Dubey suggested preserving spontaneous ventilation until sternotomy as a safer approach [29]. If muscle relaxants are needed, manual assisted ventilation should be initiated to ensure positive-pressure ventilation, followed by the use of short-acting muscle relaxants [7, 30]. In critical situations where spontaneous breathing does not recover rapidly enough, it is advised to avoid muscle relaxants and maintain spontaneous ventilation during anesthesia induction [7]. Securing the airway can be done using awake fiber-optic bronchoscopy with local anesthesia, supplemented by cautious intravenous sedation or after inhalational induction and conventional laryngoscopy [27]. The appropriate airway management strategy depends on the anatomy of tracheo-bronchial obstruction [27]. Having a rigid ventilating bronchoscope available is important to bypass distal tracheal and carinal obstructions, and preparations for cardiopulmonary bypass should be made [3, 7].

Postoperative care is critical for these patients [3]. Airway obstruction that requires reintubation and mechanical ventilation can occur due to mass enlargement from edema, hemorrhage, or surgical manipulation. Positional changes could trigger acute respiratory decompensation [31]. Adjusting the patient's position may alleviate the tumor's mass effect [7]. It is important to stress that completing

Table V. Principles of anesthesia for patients with mediastinal mass

Principle	Measures
Preservation of spontaneous breathing	Avoid heavy preoperative sedation Consider inhalational induction Assess hemodynamics and airway patency with positive pressure breathing Utilize short-acting muscle relaxants
Intubation beyond point of obstruction	Armored endotracheal tube Long endotracheal tube Double lumen endotracheal tube Rigid bronchoscope
Backup plan	Position change CPB ECMO (VV/VA) Emergency sternotomy

the operation does not indicate the end of vigilance. High-risk patients should be transferred to the intensive care unit (ICU) after surgery. The extent of postoperative monitoring for patients in the uncertain risk category should be determined based on preoperative findings and intraoperative progress [3, 7].

Surgical management

Numerous surgical approaches offer suitable access to the mediastinal and thoracic cavity. For large mediastinal tumors, the commonly used methods are midline median sternotomy or lateral thoracotomy, with less frequent use of classic clamshell or hemi-clamshell incisions. Median sternotomy, performed with the patient in a supine position, is the standard approach for cardiac operations and has gained popularity for bilateral pulmonary procedures, providing better exposure of the hilar structures [11]. It offers a broader surgical field for accessing the anterior mediastinum compared to anterior or anterolateral thoracotomy. Minimal invasive techniques, such as video-assisted (VATS) and robot-assisted (RATS) thoracic surgery, have become popular, but they are not suitable for large masses, especially those larger than 10 cm [11]. Nevertheless, the goal is to choose the least invasive technique for each patient to minimize surgical trauma and promote a fast and safe patient recovery.

Management of complications

Airway obstruction is a critical complication during anesthesia, leading to significant morbidity and mortality [32, 33]. Prompt action is required in the face of respiratory or hemodynamic complications. Adjusting the patient's position to a "rescue" position can alleviate airway compression caused by tumors, and passing a tube beyond the obstruction is an alternative [27, 33]. In cases of high-risk patients access to a rigid bronchoscope and an experienced surgical team are required due to potential challenges with soft tube passage.

In cases of severe hypotension, a rapid change to the "rescue" position is necessary [33]. Mild to moderate decreases in cardiac output can be addressed by reducing anesthesia depth and implementing cardiac tamponade management principles, such as volume expansion or vasopressor and inotrope administration [27, 33].

If respiratory or cardiovascular deterioration persists, two options remain: awakening the patient promptly if feasible or resorting to an emergency surgical intervention involving median sternotomy to lift the mass off the great vessels [3, 11, 27].

Role of cardiopulmonary bypass

The use of cardiopulmonary bypass (CPB) in managing mediastinal masses has been a subject of controversy [9, 34–36]. The feasibility of performing CPB cannulation quickly in a patient experiencing severe cardiorespiratory compromise, particularly in non-supine positions such as the lateral position for thoracic surgery, has raised concerns. To address this, some authors have opted for elective femoral vessel cannulation under local anesthesia before general anesthesia induction or even initiating CPB concurrently with general anesthesia induction instead of relying solely on standby CPB [11]. Recent studies have highlighted that standby CPB is not a favorable choice in such cases. Given the time required for CPB implementation, early consideration and appropriate preparations should be made prior to anesthesia initiation [27]. Hence, several authors have recommended femoral cannulation under local anesthesia and CPB initiation before anesthesia induction, particularly for high-risk patients categorized as "uncertain" or "unsafe" based on the Erdös and Tzanova classification (Table IV) [3, 11].

Role of extracorporeal membrane oxygenation

Extracorporeal membrane oxygenation (ECMO) is increasingly being utilized beyond rescue treatment, with surgeons now employing it for high-risk procedures to stabilize airways and hemodynamics in patients with mediastinal masses [37]. ECMO has demonstrated efficacy in controlling the airway and preventing hemodynamic collapse, making it a valuable option in emergency cases [37, 38]. While its use in managing mediastinal masses is currently limited to case reports and single-center cohorts, the indications for ECMO are expanding rapidly [39]. Successful application of ECMO has been observed in managing severe airway compression caused by large goiters (> 50%) [40].

The timing of ECMO initiation presents a decision-making challenge. Although ECMO has primarily been used as a rescue measure during life-threatening complications, delayed referrals and lack of preparedness have contributed to mortality rates [41]. Elective use of ECMO based on clinical and radiological criteria can aid appropriate patient selection, mitigating catastrophic consequences and the need for peri-arrest cannulation [37].

The choice of ECMO mode is crucial. Both venovenous (VV) and venoarterial (VA) ECMO have demonstrated successful management of mediastinal masses, depending on factors such as unpredictable extrinsic compression, heart involvement, and anticipated great vessel reconstruction [37, 42–44]. For cases involving fixed airway obstruction, VV ECMO can be utilized, eliminating the need for constant airway ventilation during surgery and facilitating better oncological resection. Cardiopulmonary bypass may also be considered in cases where heart involvement or great vessel reconstruction is expected [37, 43, 44].

The selection of cannulation method, either percutaneous or cut-down, depends on the preference and familiarity of the medical center's operators. Both approaches have shown similar outcomes, with percutaneous closure associated with lower infection rates but higher vascular complications during decannulation [41, 45].

Patients receiving ECMO for mediastinal masses face the risk of immunosuppression and secondary infections. Immunosuppression can result from underlying malignancy as well as chemotherapy, necessitating the use of colony-stimulating factors, blood products, and careful monitoring of anticoagulation profiles [37]. Although immunosuppressed patients generally have poorer survival rates on ECMO, those who are unwell enough to require mechanical ventilation often achieve comparable outcomes [37, 46].

Superior vena cava syndrome

Superior vena cava syndrome (SVCS) is the result of mechanical obstruction in the superior vena cava, commonly caused by bronchial carcinoma, malignant lymphoma, or benign factors [11]. Treatment is often palliative due to widespread malignancy. Supportive measures include head elevation, oxygen, and diuretics. Steroids, chemotherapy, or radiotherapy can reduce tumor size and symptoms, minimizing the need for general anesthesia [11, 47]. Resection and reconstruction of the SVC is a viable option for mediastinal great vessel involvement, but thorough preoperative planning is essential [11].

Key anesthetic considerations include addressing preoperative hypovolemia, using agents that maintain vascular tone and cardiac contractility, considering awake fiber-optic intubation, prioritizing spontaneous ventilation, securing lower extremity venous access, ensuring large bore IV access and cross-matched blood availability, maintaining cerebral perfusion pressure, and evaluating and planning for respiratory compromise [47].

Interventional tracheal stenting

The utilization of intratracheal self-expanding metallic stents (SEMS) presents a pivotal intervention in ensuring the patency and functionality of the compromised airway in patients with major airway stenosis and collapse such as in the case of mediastinal mass syndrome [48]. These stents serve as a crucial adjunct to both pre- and post-surgical intervention, providing a proactive means to secure the compressed trachea and main bronchi, thereby maintaining essential ventilation [49]. They have been employed in various instances of tracheal stenosis, including cases resulting from intubation or tracheostomy. For patients with benign tracheal stenosis or obstruction, tracheal stents offer a viable alternative to traditional open surgery [50]. By offering structural support and mitigating the risk of airway collapse secondary to mass compression, SEMS not only ensure immediate relief of respiratory distress but also play a significant role in stabilizing the airway during and after surgical intervention [49]. This adjunctive measure warrants consideration within the spectrum of management strategies for mediastinal mass syndrome, offering a valuable avenue for securing airway patency and ensuring optimal respiratory function in affected individuals [48]. Nevertheless, a significant number of patients undergoing endotracheal stent placement often experience complications necessitating additional interventions to uphold airway patency. Consequently, judicious consideration is imperative when identifying suitable candidates for this procedure [49].

Multidisciplinary approach and collaboration

As mentioned before, effective perioperative management of mediastinal mass syndrome relies on a collaborative approach involving a multidisciplinary team of healthcare professionals. This team includes anesthesiologists, surgeons, intensivists, radiologists, pathologists, and oncologists. It is vital to emphasize the significance of effective communication, shared decision-making, and a comprehensive outlook to enhance patient outcomes and address unforeseen challenges throughout the perioperative process [7, 50, 51].

In addition, it is imperative to recognize that suitable structural changes need to be implemented in healthcare units that handle patients with mediastinal tumors. Furthermore, this comprehensive approach and philosophy should become a standard way of thinking for physicians across all involved specialties and disciplines.

Existing evidence and future directions

Unfortunately, the existing literature lacks sufficient studies on the management of patients undergoing mediastinal mass operations. Currently, there are only a few case reports, case studies, and review studies available, resulting in the absence of relevant guidelines [11]. However, several valuable protocols and algorithms have been suggested by certain authors [3, 7, 11, 16]. Early case reports from the 1980s described life-threatening cardiopulmonary arrests during anesthesia in children with mediastinal masses [52–54]. In 1999, Goh *et al.* recommended femoral vessel cannulation in severe cases with more than 50% airway obstruction at the lower trachea and main bronchi [55]. Knadler *et al.* presented a case series highlighting characteristic complications and strategies to prevent adverse events in patients with mediastinal tumors [5]. Limited retrospective and prospective studies have attempted to correlate the risk of general anesthesia with pulmonary function tests and tracheal cross-sectional area, but without definitive predictors of complications [13, 16, 17, 56].

Béchard *et al.* hypothesized that the incidence of complications is lower in the adult population and reported on a series of 98 patients undergoing anesthesia [1]. Azarow *et al.* retrospectively evaluated the incidence of intraoperative life-threatening cardiovascular complications in patients with mediastinal masses [57]. Ho *et al.* presented a challenging case of a pregnant woman undergoing mediastinal mass resection and emphasized the need for a methodical and multidisciplinary approach [58]. Tan *et al.* studied numerous case reports, revealing the occurrence of complications and the use of extracorporeal circulation in some cases [7].

Promising developments in imaging techniques, surgical interventions, and perioperative care protocols offer hope for improved outcomes in mediastinal mass syndrome. Emerging trends, such as minimally invasive surgical approaches, targeted therapies, and enhanced recovery after surgery (ERAS) protocols, hold potential for better patient management in the future. Multi-disciplinary collaboration is crucial for successful tumor resection and minimizing morbidity and mortality. Additionally, pulmonary rehabilitation and regular radiographic surveillance are essential for long-term well-being and monitoring disease recurrence [51].

Conclusions

Several algorithms have been proposed to guide the management of patients with mediastinal masses. General anesthesia should be reserved for selected patients with severe tracheobronchial obstruction who are potential candidates for curative procedures, with appropriate precautions taken. Alternatively, biopsy under local anesthesia or preoperative tumor shrinkage with chemotherapy or radiotherapy is strongly recommended. Whenever possible, anesthesia should utilize local anesthesia or aim to reduce tumor size through radiation and chemotherapy before resorting to general anesthesia. Risk stratification based on clinical and radiological criteria is essential for management decisions. Key principles of anesthesia for these patients include preserving spontaneous ventilation, securing the airway beyond the obstruction, flexibility in patient positioning, and preparedness for emergencies. Acknowledging and addressing the challenges in perioperative management of mediastinal mass syndrome is crucial. By embracing multidisciplinary collaboration and staying updated on research, healthcare providers can navigate complexities and optimize patient care, improving perioperative management in this challenging patient population.

Disclosure

The authors report no conflict of interest.

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