CONTENTS

| 1. | Introduction to Mechanical Ventilation1 | | | | | |
|----|---|---|--|--|--|--|
| 2. | History of Mechanical Ventilation11 | | | | | |
| 3. | * | Anatomy of Respiratory System29 Anatomy of airway: Upper airway and lower airway Upper airway: Nasal passages: Sinuses; Pharynx; Larynx | | | | |
| | * | Lower airway: Trachea, conducting airways (nonalveolate region) | | | | |
| | * | Respiratory zone (alveolate region) | | | | |
| | * | Nerve supply to respiratory system | | | | |
| | * | Blood supply to respiratory system | | | | |
| | * | Lymphatic drainage | | | | |
| | * | Thoracic cage | | | | |
| 4. | App | lied Physiology of Respiration65 External respiration | | | | |
| | * | Internal respiration | | | | |
| | * | Oxygen transport and oxygen dissociation curve | | | | |
| | * | Control of respiration | | | | |
| | * | Ventilatory response to carbon dioxide | | | | |
| | * | Ventilatory response to hypoxia | | | | |
| | * | Protective mechanisms in respiratory system | | | | |
| | * | Symbols used in respiratory physiology and mechanical ventilation | | | | |
| 5. | Оху | gen95 | | | | |
| | * | Physiological importance | | | | |
| | * | Availability | | | | |
| | * | Oxygen transfer across "alveolar capillary membrane" | | | | |
| | * | Transport of oxygen in blood | | | | |
| | * | Oxygen dissociation curve | | | | |
| | * | The oxygen cascade | | | | |

| | ME | CHANICAL VENTILATION MADE EASY | | | |
|----|---|--|--|--|--|
| | * | Нурохіа | | | |
| | * | Oxygen toxicity | | | |
| 6. | Ме | chanics of Respiration129 | | | |
| | * | Respiratory apparatus and muscles of respiration | | | |
| | * | Normal lung movements | | | |
| | * | Normal movements of respiration Some abnormal ventilation | | | |
| | * | Lung volumes | | | |
| | * | Dynamic tests for ventilation | | | |
| | * | Pleural cavity | | | |
| | * | Abnormal chest and lung movements | | | |
| | * | Controlled respiration Diffusion respiration | | | |
| | * | Respiratory movements in anesthesia | | | |
| | * | Compliance, resistance and time constant | | | |
| | * | Work of breathing | | | |
| 7. | Ме | chanical Ventilation: Machine-assisted | | | |
| | | athing189 | | | |
| | * | Definition | | | |
| | | Lata marithment or a sixture or a second constitution (LDD) (| | | |
| | * | Intermittent positive pressure ventilation (IPPV) | | | |
| | * | Types of artificial respiration | | | |
| | | | | | |
| | * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous | | | |
| | * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration | | | |
| | * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation | | | |
| | * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration | | | |
| | * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical venti- | | | |
| 8. | * * * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical ventilation Possible modifications in each phase | | | |
| 8. | * * * * * * | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical ventilation | | | |
| 8. | | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical ventilation Possible modifications in each phase Chanical Ventilator: Basic Concepts | | | |
| 8. | | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical ventilation Possible modifications in each phase Chanical Ventilator: Basic Concepts | | | |
| 8. | | Types of artificial respiration The simplest ventilator The pressures related to respiration Normal pressure ranges during spontaneous respiration Physiological effects of positive pressure ventilation Manipulation of respiratory cycle in mechanical ventilation Possible modifications in each phase Chanical Ventilator: Basic Concepts | | | |

| | CONTENTO |
|---------|--|
| | CONTENTS xvii |
| | Ideal initial setting Pacitive and agriculture processes (PEER) |
| | Positive end expiratory pressure (PEEP) |
| 9. | Available Modes of Ventilation271 Available modes |
| | Available filodes Primary modes |
| | Settings on the primary modes |
| | Special modes Non-conventional modes |
| | High frequency ventilation |
| | New generation |
| 10. | Acid-base Regulation329 |
| | Acid-base regulation |
| | Respiratory acidosisRespiratory alkalosis |
| | Metabolic acidosis |
| | Metabolic alkalosis |
| | Interpretation of arterial blood gas values Technique of obtaining arterial blood samples |
| 11 | Indications for Mechanical Ventilation and |
| • • • • | Respiratory Failure347 |
| | Indications for ventilator therapy |
| | Respiratory failure Two types of respiratory failure |
| 12 | Maintenance of Airway and Tracheal |
| 12. | Intubation365 |
| | The common causes of upper airway obstruction |
| | Different artificial airways for protecting patient's airway |
| | Endotracheal intubation |
| | Indications for endotracheal intubation |
| | LaryngoscopesTechnique of intubation |
| | Stabilisation of endotracheal tube |
| | Different types of endotracheal tubes and cuffs |
| | |

| 13. | Coi | Early complications Delayed complications Positive pressure related problems Artificial airway related problems Ventilator associated pneumonia Oxygen toxicity Psychological and socioeconomical complications Complications attributed to operation or operator of ventilator Monitoring the patient Monitoring the ventilator Key board of a ventilator—Control panel and display panel |
|-----|-----|--|
| 14. | We | Aning from Ventilator |

xviii MECHANICAL VENTILATION MADE EASY