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Chapter review – Tracheal and bronchial surgery: High jet frequency ventilation

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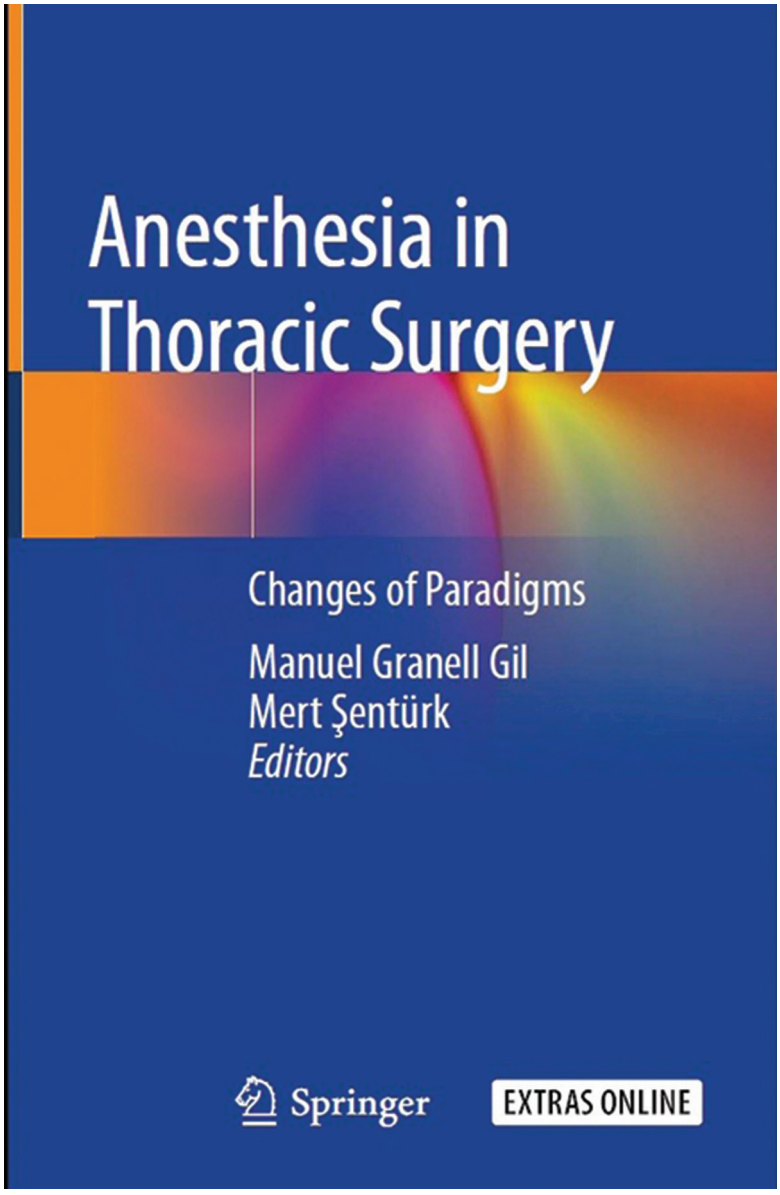

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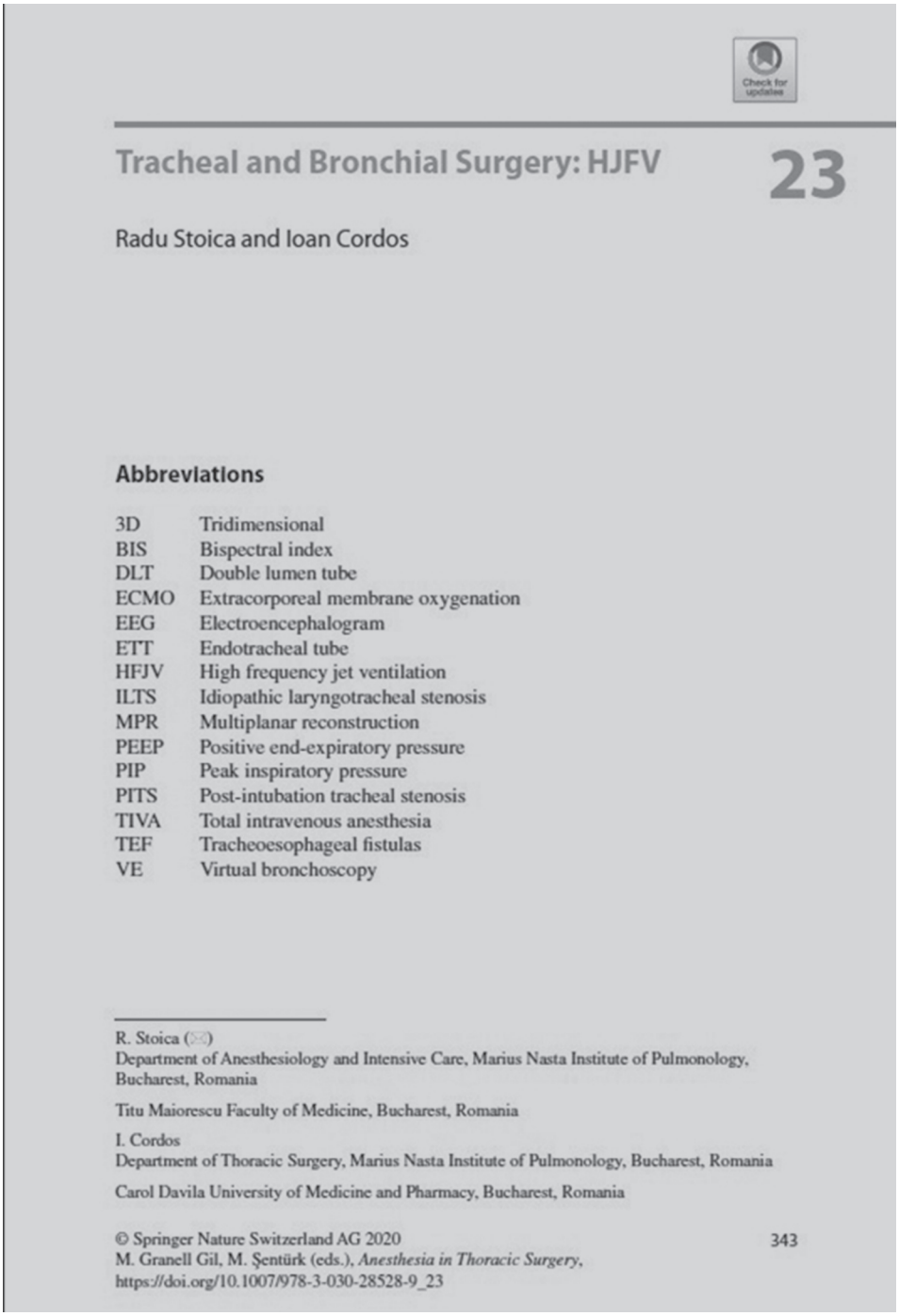
This year, Springer Nature published "Anesthesia in Thoracic Surgery – Changes of Paradigms", a book edited by Manuel Granell Gil (Consorcio Hospital General Universitario, Valencia, Spain) and Mert Senturk (Istanbul Medical Faculty, Department of Anaesthesiology, Istanbul University, Turkey) (Figure 1), who brought together a significant group of authors from around the world who managed to produce this important paper covering all aspects related to anaesthesia and specific perioperative issues in thoracic surgery.

The paper is particularly relevant for the Romanian medical arena, as one of its chapters, namely the one concerning the perioperative and anaesthetic management in tracheal surgery—Tracheal and Bronchial Surgery: HJFV—was authored by the most "like-minded" team of specialists in



Tracheal and Bronchial Surgery: HJFV

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Radu Stoica and Ioan Cordos

Abbreviations

3D	Tridimensional
BIS	Bispectral index
DLT	Double lumen tube
ECMO	Extracorporeal membrane oxygenation
EEG	Electroencephalogram
ETT	Endotracheal tube
HFJV	High frequency jet ventilation
ILTS	Idiopathic laryngotracheal stenosis
MPR	Multiplanar reconstruction
PEEP	Positive end-expiratory pressure
PIP	Peak inspiratory pressure
PITS	Post-intubation tracheal stenosis
TIVA	Total intravenous anesthesia
TEF	Tracheoesophageal fistulas
VE	Virtual bronchoscopy

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this pathology in the country, co-workers at “Marius Nasta” National Institute of Pneumology of Bucharest: Associate Professor Radu Stoica, Head of ICU and Professor Ioan Cordos, Head of Thoracic Surgery (Figure 2). Their extensive expertise in this field (among the most comprehensive in Europe) (1–5) put them in the position of being asked to present their experience in this book.

The chapter delivers a thorough presentation of the options available in tracheal surgery anesthesia, multiple options based on the aetiology of the stenosis—post-intubation and post-tracheostomy, primary or secondary tumours (usually, by invasions from neighbouring organs), or on other rare causes**.** The site of the lesion is equally important, as the anaesthetic technique varies by approach (cervical, upper or lower thorax) or by the pathology of the upper or lower end of the trachea—the junction with the larynx or, distal, with the lung.

The standard resection of the tracheal carina or the sleeve carinal penumonectomies, the involvement of the oesophagus in post-intubation tracheo-oesophageal fistulas, the extended involvement at laryngeal level (requiring resections of the cricoid cartilage and anastomosis in the thyroid cartilage), the complex stenoses involving the distal part of the larynx requiring longitudinal sections of the posterior part of the cricoid or the anterior aspect of the thyroid cartilage, the unilateral recurrent lesions (usually by tumoural invasion) are all conditions that call for knowing certain tips and tricks about the actual anaesthesia and the perioperative preparations and care.

The special equipment needed for anaesthesia in this type of surgery, especially the high-frequency jet ventilation device is also presented in this chapter. Without such equipment, part of the now common surgical techniques would be impossible and a significant number of patients suffering from this pathology would not be given a trouble-free solution, but remain bearers of breathing stoma.

Primary bronchial stenoses, most commonly benign (post-TB or post-trauma) but also tumoural, may have a surgical solution by anastomosis resection of the aerial duct segment involved exclusively, thus saving viable lung parenchyma. The anaesthetic manoeuvres needed for these interventions are also described in this chapter (6,7).

We invite you to read this chapter and this book intended not only for ICU doctors but for their peers working in other related specialties—thoracic surgeons, pulmonologists, bronchologists, ENT specialists and even trauma surgeons or endoscopists. The pathology implications are extremely complex, and this book contains insights that are helpful for a broad category of medical doctors from many specialties.

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