## Foreword

## LÁSZLÓ HARSÁNYI

"Vulnera sanentur": the miraculous healing of wounds – their ability to heal – has been a long cherished dream of patients and their doctors, from Hippocrates, the "Father of Medicine", to the best loved magical hero of our times, Harry Potter. Everyone has had or will receive a wound sometime in their life, and we all have hoped and continue to hope for the fastest possible and most complete wound healing. This is why materials and methods for wound covering and/or treatment form an important and separate part of the history of surgery. However, paradoxically, while surgical techniques have been developing at a fast – and ever increasing – pace during the past couple of centuries, wound treatment principles and practices have advanced at a much slower pace. The reasons have perhaps been that the healing of uncomplicated wounds happens spontaneously or that there have essentially been no tools to support the healing of complicated wounds; or perhaps there are other reasons. From a historical perspective the true breakthrough came with the introduction of the practice of asepsis-antisepsis, while progress in wound physiology and pathophysiology ushered in the recent development of innovative methods. The latter include the so-called intelligent dressings and the method of negative pressure wound therapy (NPWT).

The practice of NPWT, which is now more than two decades old, is an entirely new and unequivocally successful chapter in the history of wound care. Following its introduction in the United States, NPWT has been rapidly adopted all over the world even though its exact mechanism of action still has not been explained; however, it has proven so effective in practice that "practice based evidence" arguments have easily overridden the requirements of "evidence based medicine". Regardless of aetiology, this technology can be recommended for the treatment of almost all kinds of wounds; it promotes wound healing through improving the oxygenation and decreasing the bacterial load of the wound base, eliminating exudate stagnation, alleviating oedema that maintains abnormal pressure on the affected tissues, and presumably many other currently unknown mechanisms. In parallel with the successful use of NPWT in daily practice, there are currently experimental studies under way to achieve a deeper understanding of its mechanism of action and to further extend its clinical uses. These are true translational studies, since experimental results can be almost instantaneously translated into clinical practice.

The authors of this book are committed proponents and long term practical users of this method. Therefore, the content of this book is not a compilation of scientific literature but a summary of results achieved in cooperation with these doctors' dedicated patients. Their hope is that the fruit of their labours reaches readers who encounter chronic, hard-to-heal wounds in daily practice and thus every additional piece of knowledge translates into making their jobs easier and their patients' lives better. The authors are grateful for the interest in this book because – just like the readers – they are intimately familiar with the difficulties and pitfalls of wound management. To repay your attention and confidence we will detail our experiences with the greatest honesty, including even the occasional doubt.

Lectori benevolo salutem!

August 2017

## Content

Foreword	
History, nomenclature and principles of negative pressure wound therapy	5
I. Surgery	
Treatment of abdominal compartment syndrome with NPWT	8
NPWT in the treatment of septic abdomens	13
NPWT in acute pancreatitis	
NPWT for enteroatmospheric fistulae	
NPWT therapy for suppuration after mesh implantations	
Ruptured abdominal aneurysms and open abdomen therapy	
NPWT and ciNPT in plastic surgery	40
The effects of NPWT on wound healing and microcirculation in plastic surgery:	
The role of venules.	
Endoscopic vacuum therapy (EVT) in the upper and lower gastrointestinal tract	
Endoluminal NPWT treatment of anastomotic leakage following rectum resection	
NPWT treatment of pressure ulcers.  NPWT treatment of diabetic foot.	60
Chronic wounds and diabetic foot	
Musculoskeletal surgery techniques – Necrotising fasciitis	
Prophylactic NPWT	
II. Trauma, orthopaedics	00
Application of NPWT in traumatological practice	97
Application of NPWT in traumatological practice  Application of NPWT in compartment syndrome of the extremities	
Application of NPWT in the treatment of decollement injuries.	
Application of NPWT in the prevention and treatment of periprosthetic infections	
Orthopaedic applications of NPWT.	
Application of NPWT in the treatment of postoperative spinal infections	117
III. Thoracic Surgery	
Treatment of chest cavity suppurations with NPWT following trauma and in some rare clinical cases.	121
Treatment of postoperative thoracic empyema	
Treatment of sternoclavicular joint inflammation with NPWT	
IV. Cardiac Surgery	150
NPWT for the treatment of deep sternal infections.	136
Application of incisional NPWT in cardiac surgery	
V. Paediatric Surgery	112
Paediatric surgery aspects of NPWT	1.45
NPWT treatment in paediatric traumatology.	
	132
VI. Urology  NPWT in urology	157
Fournier's gangrene.	
	100
VII. Dermatology	
NPWT treatment of ulcers due to chronic venous disease	
Use of NPWT in dermatology. Special, rare cases	169
VIII. Other	
The effects of immune suppression on wound healing:	
Wound treatment with NPWT in immunosuppressed conditions	
Testing NPWT in experimental animal models of abdominal compartment syndrome	
Nursing tasks during NPWT	
Health economic aspects of NPWT: Cost effectiveness and quality of life	
Acknowledgements	200