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# Introductory Chapter: Historical Aspects and Virtues of the Aortic Surgeon

*Ana Terezinha Guillaumon and Daniel Emilio Dalledone Siqueira*

## 1. Introduction

The history and description of abdominal aortic aneurysms is as old as mankind. The earliest accounts date back to the Hearst Papyrus, an integral part of the Eber Papyrus of ancient Egypt, circa 1500 BC. There is also mention of this disease in the Sushruta Samhita manuscript from 800 to 600 BC, written by Sushruta, founder of Ayurvedic medicine [1–3]. Several authors continued describing specific aspects of aortic aneurysm disease, such as Galen and Antyllus. At that time, there was no treatment described for aortic aneurysm repair [4].

However, the evolution of the treatment of abdominal aortic aneurysms only occurred in 1817, when Cooper performed the first aortic ligation for the treatment of a ruptured external iliac artery aneurysm [3]. The patient died four hours after the procedure. It was only in 1923 that the first successful surgical treatment for the treatment of arterial aneurysm occurred, being responsible for the development of the endoaneurysmorrhaphy technique [5]. Several surgeons worked hard, in the 19th and 20th centuries, to develop safe surgical treatment methods with low mortality. Nissen performed the surgical treatment of an abdominal aortic aneurysm in Albert Einstein by wrapping him in cellophane [6, 7]. This surgery allowed Einstein to live more 7 years.

Alexis Carrel contributed significantly to vascular surgery. He developed the techniques of vascular anastomosis, allowing new perspectives in the treatment of abdominal aortic aneurysms [1–3]. In 1952, Arthur Vorhees performed the repair of a ruptured aortic aneurysm with a synthetic graft, applying vascular anastomosis techniques, marking the beginning of the golden age of aortic surgery [8].

Great surgeons such as Ernest Stanley Crawford, Michael Ellis DeBakey and Denton Arthur Cooley improved vascular surgical techniques, introducing sequential clamping methods, with shorter ischemia times [9]. As a result, they obtained fantastic results in open abdominal aortic surgery.

The research and improvements in abdominal aortic surgery continued over the years, allowing new technical options to be developed. Juan Carlos Parodi 1976 began the study of grafts for endovascular use. However, it was only in 1990 that Parodi performed the first successful endovascular surgery in humans [10].

Aortic aneurysm disease continues to be the source of numerous studies. New perspectives in identifying etiology, pathophysiology, diagnosis and treatment should be encouraged. Surgical treatment has advanced significantly in recent years with less invasive techniques and lower morbidity and mortality.

This book aims to provide an objective technical and scientific approach to abdominal aortic aneurysm disease. In addition to the aspects inherent to technical knowledge of aortic aneurysmal disease for successful treatment, the surgeon must have the skills and virtues.

## 2. The virtues of the aorta surgeon

The surgeon, especially those who approach the aorta, sometimes faces situations that are almost impossible to correct and it is at this moment that we feel the limit of our performance. There is the treatment for all patients, but it depends on the medical technical decision associated with the patient's care. Therefore, the clear and objective explanation to the patient, the "steps" to be followed, is a joint and fundamental action for the success of the treatment, whatever it may be. Thus, a doctor-patient relationship is built, whose trust implements the treatment actions.

The surgeon does his/her work far beyond the purely technical aspects. Well, the construction of a career as a surgeon cannot be only technical but based on moral aspects and humanism. We will discuss the four virtues that must be developed and are essential to a good surgeon.

The first virtue is courage, it represents the beginning and is most admired for its ability to overcome fear. The fear of approaching the largest vessel in the human body, which is the aorta, is responsible for bringing life to all tissues and organs. This virtue is not a spectacle and is never seen as a success. Courage is a virtue that is present in the lives of heroes, who believe in their principles: it serves to think well, to advance or retreat, especially in operative approaches.

The second virtue is humility, a singular virtue because the surgeon's self-works. It makes the surgeon not proud of his/her technical preparation and surgical results. This virtue awakens the surgeon to the awareness of the impotence of imitating God, without being so. It also allows the surgeon to be clear about reality and possible difficulties.

The third virtue is prudence, it is the exercise of the superego leading the professional to do and choose what is absolutely necessary. Avoiding acts opposite to necessary in the treatment of the patient. Prudence has as its principle the condition of fidelity between technique and absolute character. It is a structural part of medical ethics.

The fourth virtue is simplicity, it is the lightest of virtues. This one is unquestionable, it is just real. Simplicity summarizes existence. It is virtue linked to intelligence, it turns complex actions into simple actions.

We believe that the union between technical and scientific knowledge associated with the virtues allows for greater humanism in the doctor-patient relationship.

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