Reflections on the creation of a new surgical technique

Prof. Dr. José Honório Palma da Fonseca*

The experience of the Paulista School of Medicine (Federal University of São Paulo - UNIFESP), in the development of endoprostheses, allowed several interesting aspects to be reflected on and debated, in respect to creative and innovated ideas. Drastic changes took place in the established patterns, permitting the development of new techniques and causing the initiation of training of physicians interested in this subject.

One of the first points to be stressed was the necessity of the involvement of professionals to form a study group. This, for sure, was a strong point of our project, making each professional, utilizing the vision and experience of many years enrich the project, basically allowing this new science to developed rapidly and with a wealth of details. The cardiovascular surgeon, as well as the vascular surgeon and the hemodynamicist, sometimes treat the same diseases, but using different instruments and concepts, one observes the patient, more through anatomic optical examinations, while the others observe the patients through radiological findings, some physicians perform more diagnoses and others more therapies, with distinct visions related to the same disease.

To analyze the emergence of a new technique presupposes that there is a badly-resolved problem, something that bothers us, in our case the presence of diseases such as aortic dissection and aortic aneurysms, whose surgical treatment is linked to incredibly high mortality and morbidity rates. It was this problem was that stimulated us to the look for new more practical and safer options to treat these anomalies. Patients with severe diseases such as these, in which the use of classical approaches does not give encouraging results, frustrates us, creating anxiety to find something different, that may resolve the problem more acceptably. In this case, what occurred was not exactly a change of a surgical technique, but a change of a traditional concept in medical literature. Since the repair of aortic aneurysms and dissections started, practically 50 years ago, the injured aorta was always directly approached using thoracotomy or laparotomies. Today, the proposed intervention is by the manipulation using catheters and this represents, without doubt, a radical change.

All new techniques performed in human beings must follow specific rules and ethical norms that have been very well defined by different commissions that exhaustively studied and are still studying the subject.

"To remain within proposed limits and at the same time to have courage without causing harm, is a delicate formula in the development of the science."

Everyone knows that a new technique or a new material to be utilized in human beings passes through several phases of standardized research in laboratories, terminating in animal experiments. However, the critical moment for the research surgeon is when it is decided to start clinical experiments of the developed and tested product.

Ethical aspects distress the researcher, while feelings of uncertainty permeate the mind of the patient who confidently holds on to the physician words, which are always based on scientific evidence, in the responsibility and in the primordial intention to cure.

In some areas of medicine, when an invasive procedure is performed, there is always, the possibility of a fatal event occurring or an event that limits the life of the patient. It is clear that the medical procedure in a surgery is very different to a diagnostic examination, as there are many more potentially severe variables (anesthesia, incisions, dissections, sutures etc.).

When a therapeutic proposal is based on the great experience of a solid group, this proposal has a good chance of having good, compensating results. All scientific work, in reality, normally appears in a logical sequence, it does not originate from nothing, but it is based on the knowledge already acquired and verified. Analyzing, in particular, the case of vascular endoprostheses from the worldwide viewpoint, we can observe the enormous force of this idea, by the great quantity of cases published, in a short period of time.

Cardiovascular surgeon, Professor in the Cardiovascular Surgery Service of the Surgical Department of UNIFESP-EPM.