Scientific revolution in dentistry

In his book *The Structure of Scientific Revolutions*, Thomas Kuhn argued that a scientific revolution takes place as the result of an episode of noncumulative changes where one paradigm is replaced in whole or in part. Kuhn observed that the process of a scientific revolution begins with an existing paradigm, during which normal science is performed. Eventually, an increase in anomaly leads to a crisis, which ends in the revolution itself, that is, a new paradigm. This is Kuhn's view: Changes in scientific theories repeatedly follow this pattern.

The development process of the dental disciplines seems similar. Throughout the past half-century, in the field of dentistry, and particularly in the field of periodontal science, with the advent of dental implants, a scientific revolution took place, like that described by Kuhn. The new paradigm of dental implants is now accepted as normal science, and as a consequence, in dental and periodontal care, the paradigm of treatment has changed in every area, including diagnosis and treatment. In addition, this has brought about a revolutionary change in the conceptualization of dentistry, from the common knowledge of patients to academic research.

However, despite the conventionalization of dental implants, there exist problems that have not yet been resolved in the dental and periodontal disciplines, and these anomalous cases are creating a new crisis for the current practice of 'normal science.' The situation demands the emergence of a new paradigm that can overcome such a crisis, and it is thought

that stem cells, gene therapy, and other developments are, through the process of scientific verification, showing the potential to become a new paradigm for the dental and periodontal disciplines and thus show the possibility of being converted to 'normal science.'

In the 21st century, scientific changes will definitely occur in the fields of periodontology and implants, and sooner or later we can expect a scientific revolution.

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