

# The fourth coming

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Forty years ago, in March, 1978, J.C. Stevens sent a letter to the *Journal of the American Medical Association* (JAMA), titled *Surgical Nutrition, The fourth coming*<sup>(1)</sup>. “The advent of intensive nutritional support for nutritionally depleted preoperative and postoperative patients might well prove to be the “fourth coming” of a major advance in the care of surgical patients in the past 150 years”.

According to the Dictionary of the Spanish Royal Academy, the Spanish term *advenimiento* has the following meanings: 1. Arrival of someone or something. 2. Accession of a Supreme Pontiff or a sovereign to the throne. 3. Occurrence, event. Truly, the development of parenteral nutrition represents something completely new, a great occurrence, an event in the historical path of medicine.

In his letter, Evans suggests that the first coming was the use and development of anesthesia by Crawford W. Long in 1847 through the use of ether in obstetric patients, including his own wife. Today we see how surgery under anesthesia went from something truly barbaric to a painless procedure that allows the surgeon to perform an intervention to the necessary extent.

The second coming happens in 1867, when Joseph Lister acknowledges the importance of a wound infection and proposes the principles of asepsis and antisepsis.

The third coming is the advent of antibiotics, starting with penicillin by Sir Alexander Fleming and co., which meant a cure for infections and, specially, prevention from surgical infections.

The fourth coming, according to Stevens, is when, in 1968, Stanley J. Dudrick and co. suggest total paren-

teral nutrition in patients with severe gastrointestinal tract malfunction or in a severe catabolic state who also displayed an accelerated wound healing in cases marked by a bad prognosis.<sup>(2)</sup>

Such advents represent an immense progress, which translates into the saving of many lives because of the way in which medical care is dispensed, specially in the case of a surgical patient. The fourth coming, parenteral nutrition, shifted the prognosis of biologic entities previously related to a high mortality rate such as, for example enterocutaneous fistulas. It also gave rise to a new and well-structured profession: clinical nutrition.

Today, fifty years after Dudrick and co.'s publication<sup>(2)</sup>, parenteral nutrition is a formidable component of the therapeutic arsenal, specially in caring for critically ill patients.

North American science philosopher and historian Thomas S. Kuhn (1922-1996), in his book *The Structure of Scientific Revolutions*<sup>(3)</sup>, popularized the term *paradigm*, which is currently used to represent the structure of the basic assumptions that define or constitute a scientific theory. According to the Dictionary of the Spanish Royal Academy, this term derives from Latin *paradigma*, which in turn comes from the Greek *parádeigma*. These are the first three meanings:

1. m. Example or pattern.
2. m. Theory or group of theories whose center core is accepted without question and which provides the basis and model to solve problems and advance knowledge. The Newtonian paradigm.
3. m. Ling. The relationship between elements that share a phonological, morphological or syntactic context according to their linguistic properties.

Pursuant to the foregoing, we can call each of the ‘comings’ described by Stevens paradigms, and it is

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valid to talk about the paradigm of parenteral nutrition. So have suggested Sanchez and Daly<sup>(4)</sup>.

The impact of the advent of parenteral nutrition (NP) developed by Stanley J. Dudrick has been huge. Given the case of acute pancreatitis, NP helps preserve body composition and a significant increase of protein deposits<sup>(5)</sup>; it is the primary and essential therapeutic modality in case of intestinal failure due to enterocutaneous fistulas and other causes, and it's dispensed safely at the patient's residence<sup>(6)</sup>; The European Society of Parenteral and Enteral Nutrition (ESPEN) has published a set of full guidelines for the use and administration of NP<sup>(7)</sup>.

Today NP represents a formidable therapeutic weapon, and properly combined with enteral nutrition, it has had a part in saving thousands of lives.

S.J. Dudrick himself and J.M. reflect upon and review the disputes and challenges of Parenteral Nutrition<sup>(8)</sup>, such a great advent in the history of medicine.

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Stanley J. Dudrick was born in Nanticoke, Pennsylvania on April 9th, 1935. He obtained a B.S. in Biology at the Marshal College and a doctor's degree in the University of Pennsylvania in 1961. He is currently a Professor Emeritus at Yale University.