

On the Passing of a Legend



Today is December 20, 2014. With sadness, I received a notice that P-I Brånemark died today.

We knew that Professor Brånemark was in declining health. We knew that he would not live forever, and yet his passing comes as a shock and brings with it a profound sense of loss.

Professor Brånemark was a researcher, educator, clinician, and visionary. His career changed the practice of dentistry and also changed the world.

Brånemark was an orthopedic surgeon whose research interest was in the field of soft and hard tissue healing. The way that this healing was observed was by implanting a lens encased in titanium to observe cellular activity that occurred at the surface of the lens. Cellular activity was recorded to determine how bone heals adjacent to an induced wound. Once the healing was achieved, the animal was sacrificed and the lens apparatus was scheduled to be retrieved. Interestingly, the titanium lens housing remained affixed to the surrounding bone.

At that point, the investigators recognized that this union of bone and implanted titanium was unique. This may be a serendipitous series of events, but serendipity demands keen insight to appreciate the fortunate chain of events. Indeed, this is what Brånemark and colleagues appreciated, and this became the first demonstration of osseointegration.

Today, we see rapid commercialization of basic science research, but in the early 1950s, such translational research was not terribly common. Hence, Brånemark did not move osseointegration from the laboratory to the clinical floor until the initial observations were confirmed and demonstrated to be repeatable. The team conducted animal research for more than a decade before initiating human research, and that research went on for another decade before it was presented to the world.

Brånemark proved himself to be a charismatic educator. Once osseointegration was presented to the dental community, Brånemark was the primary voice to

explain the formula. It was not simple, nor was it rapid, but it was predictable, and that level of predictability had not been previously observed in implant dentistry.

As a clinician, Brånemark demonstrated the techniques that were developed in his laboratory by operating at different centers throughout the world. Clinical innovation transformed osseointegration from the management of the edentulous mandible to the management of the edentulous maxilla and the ongoing development of techniques to treat partial edentulism with implant-retained prostheses.

Beyond the expansion of uses for implants in dentistry, Brånemark's vision extended to the field of orthopedics. Osseointegration is now utilized in dental, medical, and veterinary applications. Indeed, he took this concept from "calvarium to calcaneus."

His vision extended beyond devices. He had true compassion for the level of debilitation that patients experience. If you look at his ideas, you will see innovative designs that, once embraced, could lead to more economical services for patients who are in need. The Brånemark Novum and the Zygomaticus implant are two examples of devices and techniques that could lead to less surgical intervention with shorter prosthesis-free healing times. Ultimately, these approaches were designed to reduce cost, which would bring a better service to a broader number of patients.

From a purely personal standpoint, I will always remember the first time I met Professor Brånemark. He was leading a course at the Mayo Clinic, where I was a young member of the consulting staff. My wife, Susan, and I attended the banquet that followed the meeting; with any seat available to our guest of honor, Professor Brånemark sat next to Susan and me. He was charming, entertaining, and welcoming. I will never forget that evening.

Today, we mourn the loss of Professor P-I Brånemark. At the same time, we celebrate the honor of having known him and thank our good fortunes for the knowledge that he provided.

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 Editor-in-Chief