Remembering the work of Per-Ingvar Brånemark. By EAO presenter Prof. Tomas Albrektsson, Gothenburg/Malmö, Sweden

This year’s European Association for Osseointegration (EAO) meeting in Stockholm in Sweden will be heavily influenced by the recent passing of Prof. Per-Ingvar Brånemark in December 2014. Although a physician by training, Brånemark was the first person to introduce oral implants in Sweden, as well as overseas. His efforts were initially received with great scepticism. Dentists did not at first believe in oral implants because devices used prior to the advent of Brånemark’s discovery of osseointegration had been touted as having great success, but critical analyses had found imminent failure.

Brånemark treated his first patient in 1965 and his continued implant activities led to perhaps the greatest academic struggle we, as well as overseas. His efforts were encouraged by government support for implant treatment, peaking at about 125,000 implants placed annually in a population of approximately nine million inhabitants.

From 1977 onwards, we then started training dental specialists from Scandinavia in placing dental implants. Over time, an increasing number of private practitioners in Sweden began working with them too. Some 20 years ago, Sweden placed more implants per capita than did any other country, partly owing to government support for implant treatment, peaking at about 125,000 implants placed annually in a population of approximately nine million inhabitants.

Nowadays, far fewer implants are placed in Sweden. Recent calculations point to an annual use of some 75,000, probably because many of our totally edentulous patients have already been treated. The predominant scenario in Sweden today is replacement of single teeth or treatment of partially edentulous cases, which means that the number of patients treated has not decreased to the same extent as the number of implants placed annually.

I remember the first patient with dental implants I personally met, in 1968. He was an opera singer in his forties who was unable to perform professionally owing to poor retention of his dentures. Aged 95, he recently returned for treatment to a nearby clinic, where radiographs revealed that only one of his implants had failed, but the rest have remained in good function after 47 years.

Sweden has four dental schools, at the universities of Gothenburg, Stockholm, Umeå and Malmö. Undergraduate training in implants is provided at all four schools and students are encouraged to place implants under supervision. The majority, at least at my alma mater, still has a rather critical attitude towards implants, which can be attributed to some scholars here reporting the development of peri-implantitis in 50 per cent of patients. Students then take this knowledge with them when they join an implant clinic, where most practitioners only see five per cent or so of patients with peri-implantitis.

Graduates leave university with a balanced view on the threats and promises of dental implants. For many years, postgraduate training in basic implantology in Sweden has concentrated on private practitioners who had not been allowed to work with implants earlier in their career. In addition, we have ongoing specialty education in subjects such as dental surgery, prosthodontics and periodontics. However, implant dentistry is not a recognised specialty in Sweden. Training courses in the field are provided by several commercial companies, which represent all of the major dental segments today.

From a research perspective, Swedish scientists continue to publish numerous papers on oral implants in international journals. At least one of our dental schools is regarded as being in the very top league internationally owing to pioneering implant papers originating from the school over the years. We also pride ourselves on maintaining a strong international presence. Many of our new PhDs conducting research on implant dentistry are from elsewhere in Europe and several are from overseas. Basic science reports, as well as clinical application papers, are published annually. In addition, Swedish researchers have been partners in many innovations in the areas of implants, membranes and measuring devices.

Few people know how the term “osseointegration” was initially introduced. Certainly, we believed early on that implants were directly bone anchored, but did not have a word for this phenomenon. In 1976, Brånemark consulted a linguist of the University of Gothenburg in this regard. The linguist suggested the term “osseointegration” to describe how implant treatment works and later received an honorarium of £200.

Based on histopathological research, we now regard osseointegration as a foreign body response. Jokingly, we may consider renaming the EAO the “European Association of Foreign Bodies”. Even if the EAO board proves negative to this suggestion, we expect many guests from abroad to visit Stockholm in September. Although the EAO has had two annual gatherings in nearby Copenhagen in Denmark, its 2015 conference is the first meeting ever to be held in Sweden. As a representative of the Swedish members, I welcome all of the visitors to Stockholm in what we hope to be rainy weather, so that the lecture rooms will be filled every day.