



Available online at

ScienceDirect  
www.sciencedirect.com

Elsevier Masson France

EM|consulte  
www.em-consulte.com/en



## Editorial

## The 2013 Lasker-DeBakey Clinical Medicine Research Award and cochlear implants: France unjustly overlooked. . .!

Four countries, France, the USA, Austria and Australia – in that chronological order – played key roles in the development of multi-electrode cochlear implants (<http://recorlsa.online.fr/implantcochleaire/historique.html>). In 2010, I sketched out, in these pages, the story played out all over the world [1], which had been my own for 40 years.

For almost half a century, following Djourno and Eyriès, France has made a large contribution to the success of these multi-electrode cochlear implants, which have lived up to almost all the hopes of their even most utopian promoters, far beyond the initial expectations of those who pioneered them. Total hearing loss can more or less always be overcome, even when neonatal, and deaf-mutism is thus now becoming a rarity. Moreover, multi-electrode cochlear implants are now being fitted in partial severe hearing loss, and the reliability of the material over time is such that bilateral implantation is often indicated nowadays, improving overall auditory performance and acoustic spatial perception. Even more remarkable is that cochlear implants have led on to the advent of auditory brainstem implants, the very first implanted intracranial encephalic electrostimulators – a prosthesis that should not be underestimated, however rare its indications.

Quite rightly, therefore, the Lasker jury selected this topic for its Clinical Medicine Research Award, delivered on September 10th, 2013. The choice of actual prize winners, on the other hand, was surprising, inasmuch as, of the four countries that played a role in the development of cochlear implants, only France was overlooked.

The jury's decision testifies, in this field, to the oblivion into which France was cast at the end of the last century.

More than 10 years after retiring, first from my Department, then from my lab, I felt I had to react to this strange oversight. As the former head of a team, originally based in Paris, whose work had, for a quarter of a century, focused on multi-electrode cochlear implantation (<http://recorlsa.online.fr/implantcochleaire/historicfrancais.html>) and had rapidly attracted support from numerous other university hospital initiatives nationwide, it was my duty to point out just how singular and incoherent this omission was.

Or, at the very least, to point out the facts.

For the fact is that the multidisciplinary team of the ENT research laboratory of the Saint-Antoine Hospital, which I led, can claim priority for its work in this field, in two regards.

Following a clinical research program conducted under scrupulous ethical control [2].

- It was the first to implant an 8-electrode cochlear device, in an adult male with total hearing loss, with a functional range distributed regularly along the entire frequency range of the cochlea.

This operation was performed on September 22nd, 1976.

- Encouraged by the quality of the results compared to those obtained with single-electrode implants, on March 16th, 1977 the team applied for the first patent for an implantable hearing aid in humans. The French patent, No. 77/07824, issued in 1977 [3], was taken up by Bertin & Co. following electrophysiological studies conducted by Patrick MacLeod, Director of Studies at the École Pratique des Hautes Études, which at that time was part of the Collège de France in Paris. This first patent was followed up in 1985 by two more, concerning the development of implantation techniques, and priority was at no time ever challenged.

In the light of this two-fold priority, it is interesting to see:

- that, on the English-language website of the Lasker Foundation Awards, G. Clark's Acceptance Remarks (<http://www.laskerfoundation.org/awards/2013.c.accept.clark.htm>) include the claim to have performed the first multichannel implantation in 1978;
- and that Clark et al. applied for their Australian patent on November 3rd, 1977.

In these developments, Patrick MacLeod and I had precedence over all three prize winners of the 2013 Lasker Clinical Medicine Research Award.

Our work and clinical results were subsequently regularly published in English-language journals. They were cited as early as 1977 [4], and a recent retrospective historical review [5], published in 2012, clearly identifies our priority in the field.

The third prize winner has, since 1988, been promoting what he calls "Continuous Interleaved Stimulation" (CIS), a signal processing strategy that involves a slight modification of the one we described. In his experimental human studies, however, he has never actually demonstrated the benefit in terms of auditory rehabilitation of this device over the straightforward procedure we reported 10 years previously.

These are facts of which the scientific community should be aware of.

It is to be regretted that the Lasker jury did not take account of this priority or indeed of the French contribution as a whole

and did not include the Paris team among the pioneers of the multi-electrode cochlear implantation therapy which it sought to recognize by its Award.

#### Disclosure of interest

The author declares that he has no conflicts of interest concerning this article.

#### References

- [1] Chouard CH. L'histoire de l'implant cochléaire. *Ann Fr ORL* 2010;127:288–96.
- [2] Chouard CH, MacLeod P. Implantation of multiple intracochlear electrodes for rehabilitation of total deafness: preliminary report. *Laryngoscope* 1976;86(11):1743–51.
- [3] Chouard CH, MacLeod P, Meyer B, et al. Réhabilitation chirurgicale des surdités totales et des surdités. *Ann Otolaryngol Chir Cervicofac* 1977;94(7–8):353–63.

- [4] Douek E. A new approach to the cochlear implant. *Proc R Soc Med* 1977;70(6):379–83.
- [5] Eshraghi AA, Nazarian R, Telischi FF, et al. The cochlear implant: historical aspects and future prospects. *Anat Rec (Hoboken)* 2012;295(11):1967–80.

*Former Chief of the ENT Department and  
AudioPhonoProsthesis Laboratory of the  
Saint-Antoine Hospital, Paris; Member of the French  
National Academy of Medicine, and President of the  
2nd Division (Surgery and Surgical Specialties)  
C.-H. Chouard\**

\* 10, boulevard Flandrin, 75116 Paris, France.  
Tel.: +33 614 558 139.

E-mail address: [claudio@chouard.com](mailto:claudio@chouard.com)