

EDITORIAL

Leads extraction – still an issue in Romania? From myth to reality

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Transvenous lead extraction (TLE) is the standard treatment for cardiac implantable electronic devices (CIEDs) infection^{1,2}. The need for lead extraction is rapidly increasing and this seems to be due to more complex CIEDs and sicker population³. Nevertheless, TLE itself is a high risk procedure that requires trained physicians and a equipped facility with a wide range of extraction tools and the ability to manage life-threatening complications^{4,5}. If we analyze the EHRA Task Force Position Paper on Lead Extraction published by Deharo et al. in 2012 the estimated rate is 7.5-30 lead extractions/ million/year for 500 new implants/million/year⁵. In our country, in 2015, 3538 new implants were reported for a population of approximately 20 millions, resulting in 177 new implants/million/year. This leads to an estimated rate of 2.7-11 lead extractions/million/year in our country meaning that we need at least one dedicated center for lead extraction.

In this current issue Iorgulescu et al. shows the results of 25 device removal procedures in patients with pocket and systemic infection, data collected from a group of 2028 procedures of which 1933 were implantations and the rest complication related-procedures⁶. Although a small number of patients, is the first reported in our country. They found a significantly younger population in the device removal group with more diabetes and CRT devices than the general implantation group. Indeed, the probability of CIED infection is higher in CRT patients and this may be due to longer procedure time. A study published by Landolina et al in 2011 showed that the risk increase especially after device replacement procedures with an infection rate in CRT-D patients of 1%/year⁷. Another large study, on UK patients, which analyzed infections burden found

that major comorbidities such as diabetes mellitus, heart failure, renal and respiratory failure increase also the annual rate of infections⁸.

Approximately half of the removable CIEDs in this current study were resynchronization therapy devices, results that are similar to other European data, although new data from a large multicenter European study, ELECTRa, shows that most of the removable CIEDs were dual chamber devices, pacemakers or defibrillators^{9,10}. Among this removable procedures, 11 (44%) were classified as explants, devices implanted for less than a year, removed by simple traction. The rest, 14 (56%), were classified as extractions, procedures older than one year and/or requiring special extraction tools. Of these, 3 extractions were done with the laser sheath, 3 with a femoral approach using a snare technique and 8 by simple traction of which 2 incomplete. For the laser extraction procedures they referred the patients to another centre.

The authors point out that the majority of the extraction tools are currently unavailable in our country. They are also mentioning that simple traction is effective in recently implanted devices, but in more than half of the devices older than one year special extraction tools are required. This can raise debates on whether to start or not such a complex procedure without the necessary tools, having in mind that multiple tools might be required not only for a successful procedure but especially for a safety one. Comparison of different extraction methods in term of complications is challenging, some operators argue that no tool is superior to another and the chosen should be the one that the extraction team master the best. Nevertheless, a study published by Hauser et al showed that the major

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rity of reported deaths were caused by lacerations of major veins during laser or mechanical dilator sheaths extractions. Less major complications were reported with electrosurgical dissection sheath or polypropylene and teflon dilator sheath¹¹.

In term of complications in this current study one death was reported, in a CRT patient at 72 hours after an uneventful explant procedure. The authors suggest this was probably due to an arrhythmic event and the death was not considered a procedure related complication. Reimplantation rate after device removable procedures was 80%, similar with other European data¹⁰.

In summary, most of the CIEDs in our country are still removed by simple traction. Considering the increasing demand for lead extraction, efforts should be made to have a fully equipped center with dedicated tools, techniques and well trained operators.

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