Methods: Medical records of all patients undergoing LLE between January 2012 and August 2015 were screened with regard to sufficient information on systemic infection or lead endocarditis and patients were determined thereafter. We treated 101 patients using high frequency 80 Hz laser sheaths and lead implant duration of 24 months. Indications for lead extraction were: systemic infection and lead endocarditis 29.7%, local infection 49.5%, lead dysfunction 15.8%, upgrades 3.0% and tricuspid insufficiency 2.0%. 239 leads were scheduled for LLE: 175 pacing and 64 ICD leads; mean time from initial lead implantation 96.5 ± 65.5 months (range 24-408). The patient lead distribution with regard to systemic infection or lead endocarditis: Systemic infection and lead endocarditis (Group A): 30 patients, 78 leads; local infection and other extraction indications (Group B): 71 patients, 161 leads.

Results: Complete procedural success was significantly higher in group A than in group B (100% vs. 94.4%; p = 0.0331). The laser treatment time and fluoroscopy time were numerically lower in group A. Mean time from initial lead implantation (103.4 vs. 89.6 months; p = 0.1320) and ratio of ICD leads (28.2% vs. 26.1%; p = 0.7566) did not differ significantly between the two groups. Minor and major complications were low in both groups and did not reveal any significant difference (Group A: one minor complication; pocket hematoma, group B: two major complications; pericardial effusion and emergent sternotomy due to SVC perforation). No extraction related mortality was observed.

Conclusions: The presence of systemic infection or lead endocarditis in LLE procedures allows for higher complete procedural success. When compared with LLE of non-infected leads, the infected leads require less laser and fluoroscopy times. Due to the rarity of minor and major complications, no statistical significance was found between the two groups.

P1754
Externally recorded cardiac acoustics to optimise cardiac resynchronisation therapy
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Abstract P1754 Figure.
Methods: A retrospective study was conducted on consecutive patients in need of system device upgrade between January 2012 and August 2016. All patients underwent pre-procedure venography and patients with venous occlusion or severe stenoses were included. Clinical characteristics, device information and intra-procedural data of these 39 patients were analyzed. Indications for LLE, procedural success and complications are classified in accordance with the Heart Rhythm Society Consensus Report on Transvenous Lead Extraction.

Results: 27 patients were male (74.8%) with a mean age of 75±14 years. We treated 56 leads with a mean lead age of 108.6±64.2 months, a mean fluoroscopy time of 16.1±11.8 minutes, a mean laser-treatment time of 80.9±39.7 seconds and 621β±2.7347 laser impulses delivered. Complete procedural success and venous re-occlusion followed by unilateral re-implantation was achieved in all cases (100%).

Conclusion: LLE is a safe and attractive solution to manage device upgrade or lead revision in patients with venous occlusion or relevant stenosis avoiding contralateral implantation to prevent from further complications.

P1757

Mechanical power sheath recanalization mediated lead implantation in patients with venous occlusion: technique and results

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Background: Chronic venous occlusion hampers lead revisions and upgrades in patients with pacemaker and ICD systems. This can make cardiothoracic surgery or contra-lateral implantation of leads with tunneling necessary. A technique using venous recanalization may be a preferred alternative.

Purpose: To assess the efficacy and safety of this new technique.

Methods: From 2009-2016 all consecutive patients planned for lead re-implantation or upgrade with known chronic venous occlusion were studied. All patients underwent extraction of an existing malfunctional or functional ICD- or pacemaker lead with the Cook Evolution mechanical power sheath. By using the lumen of the sheath, endovascular access to the heart was obtained for new leads.

Results: Forty-one patients were included with a total of 105 leads (2.56±1.1 leads per patient). The indication for this procedure was replacement of malfunctional leads (n=35, 85.4%) or sacrificing a functional lead in case of an upgrade (n=6, 14.6%). In total 75 leads were extracted (ICD leads n=30, 37.1%; RV leads n=12; 16%; RA leads n=19; 25.3%; LV leads n=5; 6.6%) and 30 leads stayed in situ. Mean age of lead at time of extraction was 8.6 years (median 8.6, IR 5.05, minimum 1.1, maximum 25.8). Because of damage to bystander leads during extraction we had to extract 2 additional leads (1x RA lead, 1x LV lead). Clinical success (≤4cm lead residue in situ) was achieved in 41 patients (100%) and complete success (the removal of all lead material) in 39 patients (95.1%). There were 2 minor complications (2 pocket hematoma, managed conservatively) and 1 major complication (tamponade, needing thoracotomy). Mean procedure time was 3.0 hours (median 2.0, minimum 1.28, maximum 5.35) with a mean fluoroscopy time of 14.9 min (SD: 12.5 min).

Conclusions: The technique of recanalization with the Evolution sheath is feasible with an acceptable safety profile and has a high efficacy in creating new venous access in patients with chronic venous occlusion needing cardiac lead intervention.

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Success and complication rates of lead-extraction with the first versus the second generation evolution mechanical sheath

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Background: The Evolution sheath (USA) is a power sheath frequently used for lead re-implantation of a new device is performed most commonly when it comes to system upgrade. Because venous occlusion may be asymptomatic for a long time contralateral implantation of a new device is performed most commonly when it comes to system upgrade.

Purpose: The aim of this study is to show the possibility of laser lead extraction (LLE) for venous re-occlusion and ipsilateral re-implantation.

Methods: A retrospective study was conducted on consecutive patients in need of system device upgrade between January 2012 and August 2016. All patients underwent pre-procedure venography and patients with venous occlusion or severe stenoses were included. Clinical characteristics, device information and intra-procedural data of these 39 patients were analyzed. Indications for LLE, procedural success and complications are classified in accordance with the Heart Rhythm Society Consensus Report.