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There is more to laser lithotripsy than meets the eye - A story about lithotripter settings, retropulsion and fiber diameters

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Due to technological developments and miniaturization of instruments, endoscopic laser lithotripsy is becoming a very popular and universal surgical procedure. Several parameters, ranging from laser lithotripter settings to the importance of fiber diameters are constant topics of discussion with some diverging opinions among specialists. In this presentation the authors analyze objectively some of the most important key parameters and controversies regarding laser lithotripsy: High frequency vs. low frequency lithotripsy; the role of pulse energy; laser fiber diameter; retropulsion; differences between laser fibers, etc. Using strict methodological approaches they question, confirm or even reject some of the most common and widespread beliefs concerning laser lithotripsy. All data presented are based on the authors own research and includes original automated laser fragmentation testing systems, surprising microscopic images, and impressive high-speed video footage, thus revealing many unnoticed but yet essential details rarely seen concerning laser lithotripsy: At the same power level high frequency laser lithotripsy is not more ablative than low frequency laser lithotripsy; larger fibers do not ablate more; retropulsion increases with larger fiber diameter or higher pulse energy; laser fibers with the same advertised diameter are far from being equivalent. By revealing concealed details and highlighting key elements, changes in the surgical routine among those urologists who do endoscopic laser lithotripsy might ensue.

Biography

Peter Kronenberg started his urology residency in 2008, at Hospital Prof. Doutor Fernando Fonseca in Amadora (Portugal). He has done fellowships at Karmanos Cancer Institute in Detroit (USA) with Prof. Edson Pontes (2010), and at Hôpital Tenon in Paris (France) with Prof. Olivier Traxer (2012). He has won several national and international awards, including 1st prize at the 2013 Annual Meeting of the AUA, as well as the Clinical Research Award at the 2nd Meeting of the EAU Section of Urolithiasis (EULIS) (2013). Currently, he is focusing his basic research on the technical aspects of laser lithotripsy.

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