A Comparitive Overview of Existing and Experimental Morcellators in Gynecology and Urology

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In literature, little comparison data are available between various morcellators, which are used to remove large tissue masses minimally invasively. Since various morcellators are available on the market, and they are used fairly frequently, it is important to know whether the devices perform optimally, or if one is more functional than another. To this purpose, a literature research has been performed to find all previous, current and experimental morcellators and compare their morcellation rates (g/min), i.e., the removed mass divided by its removal time. The instruments were categorized by their respective working principles and significant trends were identified in the field of morcellation from the found and calculated data. The main findings are that the newest morcellators on the market, which rely on the principle of "motor peeling," are indeed the fastest in terms of morcellation rate, yet it seems that improvements are still possible when it comes to speed and safety. Based on literature, these improvements include the use of an endoscopic bag with a custom created environment and the optimization of the continuity of the applied morcellation working principle.

Proposed Protocol for Objective Morcellator Analysis

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In literature, little comparison data are available among various morcellators, which are used to remove large tissue masses minimal invasively. Since a range of morcellators is available on the market, and their use is fairly common, it is important to know whether the devices perform optimally, or if one is more efficient than another, regardless of what the industry claims. To this purpose, a literature research was performed in a companion study to find and compare all previous, current and experimental morcellators. However, due to the lack of a standard in literature to which morcellators are tested, there is little unity in the method of reporting morcellation functionality, which makes a comparison between morcellators difficult. For this reason, a data gathering protocol is suggested to function as a tool to obtain all relevant morcellator related data. This helps surgeons to more objectively assess their morcellation procedures, compare obtained data to statements made by the manufacturers with respect to morcellation speed, and improve future in-literature morcellator data reporting.