

Holmium Laser Intrarenal Lithotripsy in Pyelocaliceal Lithiasis Treatment: to Dust or to Extractable Fragments?

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Abstract

Background: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related to operative time, associated morbidity and costs, especially by potential endoscope damage.

Methods: 5 series, each of 20 patients with single pyelocaliceal lithiasis, were analyzed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases Ho:YAG lithotripsy was used.

Results: Ureteral access sheath was used in 70% of the cases. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

Conclusions: The optimal lithotripsy method for calculi <1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Abbreviations: Ho: YAG – Holmium: Yttrium Aluminium Garnet, Hz – Hertz, mJ – milli joule

Key words: Holmium laser, pyelocaliceal lithiasis, lithotripsy, retrograde flexible ureteroscopy

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