

# Holmium Laser Lithotripsy in the Management of Ureteric Calculi

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## Abstract

**Introduction:** To evaluate the efficacy and safety of the holmium:YAG laser in retrograde ureteroscopic laser lithotripsy of ureteric calculi. **Methods:** Three hundred and twenty-five patients (256 males and 69 females) with mean age of 45 years underwent 328 retrograde ureteroscopic laser lithotripsy as the primary therapy for ureteric calculi using semirigid mini-ureteroscopes and the holmium:YAG laser (Coherent, Palo Alto, California, USA). Four consultants and three registrars performed the procedures over a period of 31 months. **Results:** The mean largest diameter of the calculi was 8.4 mm. The mean hospital stay was 1.8 days and the mean duration for the operation was 25 minutes. One hundred and twenty-two (37%) procedures were done as day surgery cases. Complete stone-free rates after single primary treatment using only the holmium:YAG laser were 75% and 91% at 4 weeks and 12 weeks of follow-up, respectively. Including 22 (7.6%) renal units which required additional procedures, the overall stone-free rate was 97%. Seventeen cases (5.2%) needed additional extracorporeal shock wave lithotripsy (ESWL) and 5 cases (1.5%) needed an additional repeat ureteroscopy and lithotripsy for complete stone clearance. Significant complications include 1 case of ureteric perforation. **Conclusions:** The holmium:YAG is a safe and effective intracorporeal lithotripter when deployed in a retrograde manner in conjunction with a mini-ureteroscope.

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**Key words:** Calculi, Holmium:YAG laser, Ureter

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