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Presentation Title: MOVING FROM FOUR HANDS TO TWO DURING FLEXIBLE URETEROSCOPY WITH STONE MANIPULATION

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Introduction

Ureteroscopy typically requires two individuals: a surgeon who manipulates the endoscope and an assistant who operates the basket or grasper. The skill level of the assistant can vary from inexperienced to experienced. A novel device designed for the LithoVue™ Ureteroscope (Boston Scientific, Marlborough, MA) enables a single-surgeon approach to ureteroscopy (URS), as the surgeon simultaneously manipulates the ureteroscope and operates a stone retrieval device. We sought to assess the workloads of these ureteroscopy paradigms.

Methods

We performed an in vitro evaluation of ureteroscopic stone manipulation with an experienced assistant (EA), an inexperienced assistant (IA) and a device designed for single-surgeon ureteroscopic stone manipulation (LithoVue Empower™, Boston Scientific). Four fellowship-trained endourologists were the primary surgeons and also served as the EA for one another. The IA was a nurse naïve to URS. Stone manipulation was performed with Dakota™, Zero Tip™ and Escape™ (Boston Scientific, Marlborough, MA). Time to stone capture and communication between surgeon and assistant were recorded. Workload was characterized by the NASA Task Load Index (TLX) instrument, which quantifies mental, physical and temporal demand as well as performance, effort and frustration of a task. Statistical analysis was performed for each item on the TLX, time to stone retrieval and number of communications during stone capture, using Kruskal-Wallis or Tukey-Kramer tests as appropriate.

