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Learning Curve for Laparoscopic Staging of Early and Locally Advanced Cervical and Endometrial Cancer

Laparoscopic staging is rapidly evolving as an important surgical approach in the field of gynecology oncology. However, the specific learning curve associated with this approach remains poorly investigated. This study aimed to evaluate the learning curve for laparoscopic staging of uterine cancers.

A series of 28 consecutive laparoscopic hysterectomies with or without pelvic and/or para-aortic lymphadenectomy for the treatment of early and locally advanced endometrial or cervical cancer were performed between July 2008 and January 2011. The analyses of the learning curves of the institution were performed for 20 patients who had undergone pelvic and/or para-aortal lymphadenectomy. The learning curve period has also been compared with the last 26 patients who received laparotomy staging ("open" group) for the same diagnosis by the same surgical team. To assess the short- and long-term outcomes we used validated questionnaires to record the clinical and follow-up results, complaints or subjective reports from the patients, and details of their quality of life. All data were collected prospectively in a database and reviewed retrospectively. The learning progress was evaluated using the cumulative sum (CUSUM) method.

The CUSUM learning curve analysis consisted of two distinct phases: phase 1 (initial 9 cases) and phase 2 (subsequent cases) which presented the mastery phase, with the operative time of 397.7 ± 63.5 vs. 300.6 ± 19.4 minutes ($P < 0.0001$). The significant differences between the two laparoscopic phases and the "open "group were the number of lymph nodes retrieved, intraoperative blood loss and hospital stay. The conversion rate of phase 1 was higher than phase 2 (2 (22.2%) respectively 1 (9%)).

This series confirms previous study findings concerning the feasibility and the safety of laparoscopic staging and provides information for surgeons in single centers considering adopting an endoscopic strategy to monitor the different aspects of outcomes during the implementation process for internal benchmarking. The operative outcome of laparoscopic

staging intervention improves with experience. The data reported in this article suggests that after an initial learning-curve of 9 patients a relevant improvement regarding the duration of the operation can be achieved for experienced surgeons who start performing laparoscopic staging of uterine cancer.