Abdominal Wall Elevation for Pneumoperitoneum in Laparoscopic Gynecologic Surgery: A Retrospective Comparative Study of Experienced and Trainee Surgeons

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Abstract

Study Objective: To evaluate the success rate and incidence of complications associated with pneumoperitoneum induction using an abdominal wall elevation device when performed by surgeons with different levels of laparoscopic experience.

Design: Retrospective comparative study.

Setting: Gynecologic minimally invasive surgery setting.

Patients: A total of 40 patients undergoing laparoscopic procedures were included. Procedures were performed by 2 cohorts: experienced gynecologists with >5 years of minimally invasive surgical activity and residents with limited experience (<5 prior minimally invasive laparoscopic procedures).

Interventions: Pneumoperitoneum induction using the LevaLap 1.0 abdominal wall elevation device.

Measurements and Main Results: Successful peritoneal entry was achieved in all patients without major access-related complications. The success rate was 100% (20/20) in the experienced group and 95% (19/20) in the resident group, with comparable results between groups. The mean time required for pneumoperitoneum induction did not prolong routine laparoscopic entry times. Procedure duration and number of attempts were comparable between groups.

Conclusion: The LevaLap 1.0 device was associated with high success rates, absence of major access-related complications, and no need for conversion to laparotomy. Its use provided effective and reproducible pneumoperitoneum induction, including when performed by less experienced surgeons under supervision, supporting a favorable safety profile.

Keywords: Abdominal wall elevation; Laparoscopic entry; Pneumoperitoneum; Surgical training; Veress needle.