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P-756 Change of anti-Müllerian hormone (AMH) value for ovarian reserve after minimal invasive benign ovarian cystectomy: Da Vinci robotic system (Xi and SP) and laparoscopic system.
Y. Park¹, H.J. Han¹, Y. Oh¹, N. Bae¹, S. Oh¹, J.H. Shin¹, Y.J. Kim¹
¹Korea University Medical College, Obstetrics and Gynecology, Seoul, Korea-South

Study question: To investigate impact on ovarian reserve after minimal invasive ovarian cystectomy using two platforms; Da Vinci robotic system (Xi and SP) and laparoscopic system.

Summary answer: Benign ovarian cystectomy using Da Vinci robotic system takes a long time, but it is an effective minimally invasive method to preserve ovarian function.

What is known already: With the development of minimally invasive surgical methods such as laparoscopic and robotic system, patient satisfaction has increased not only in terms of pain relief but also cosmetic aspects such as smaller scars. Protection of ovarian function during surgery is important in terms of fertility preservation, and this should be considered first in minimally invasive surgery. Serum anti-Müllerian hormone (AMH) is a widely used index to evaluate ovarian reserve.

Study design, size, duration: This study included patients who underwent laparoscopic or Da Vinci robotic (Xi or SP) ovarian cystectomy for benign ovarian cysts between January 1, 2018 and September 30, 2022 at a single institution. A retrospective study was conducted through electronic medical chart review.

Participants/materials, setting, methods: A total of 128 patients were enrolled. Among them, 71 patients underwent laparoscopic surgery and 58 patients underwent robotic surgery. The preoperative AMH value was determined as the value within 4 weeks before surgery, and the postoperative AMH value was determined as the value from 1 month after surgery to within 1 year after surgery. The AMH change value (ΔAMH) was expressed as a percentage value; (postAMH – preAMH) x 100 / preAMH

Main results and the role of chance: There was no significant difference in preoperative age, BMI, parity, cyst size, and cyst position ratio. Estimated blood loss during operation, Hb drop, length of hospital day, adhesion detachment rate, and cyst rupture rate also showed no difference. However, the operation time was significantly shorter in the laparoscopic group. (68.51 ± 30.99 minutes vs. 105.17 ± 38.87 minutes, p < 0.01)

The mean preoperative AMH was significantly higher in Da Vinci robotic system than laparoscopic system. (5.89 ± 4.81 ng/mL vs. 4.02 ± 3.61 ng/mL, p = 0.02) The mean postoperative AMH was also higher in Da Vinci robotic system. (4.31 ± 3.34 ng/mL vs. 3.02 ± 2.64 ng/mL, p = 0.02) But, the mean ΔAMH was not significantly different between two groups. (-19.55 ± 40.67 % in laparoscopic system vs. -19.95 ± 38.79 % in robotic system, p = 0.96)

When the robot groups were divided into Xi system (N = 21) and SP system (N = 37) and compared, but ΔAMH did not show significant differences among the three groups. (-19.55 ± 40.67 % in laparoscopic system vs. -14.63 ± 47.80 % in Xi system vs. -22.97 ± 32.97 % in SP system, p = 0.75)

Even in the patient group with preoperative AMH below 2, ΔAMH was -9.50 ± 57.58 % in the laparoscopic system (N = 20) and -11.72 ± 60.92 % in the robotic system (N = 11), showing no significant difference between the two groups. (p = 0.92)

Limitations, reasons for caution: A limitation of this study is that the measurement period of AMH was set within a wide range within 1 year after surgery. In addition, the small sample size when divided into two systems, SP and Xi, is also a limitation.

Wider implications of the findings: Compared to the existing laparoscopic system, the robotic system does not show a significant difference in protection of the ovarian reserve, so it will be widely selected as an option for minimally invasive surgery.

Trial registration number: Not applicable