Optimal Timing and Feasibility of Single-Port Laparoscopic Ovarian Cystectomy on Postpartum Day Two After Vaginal Delivery

Zhou Yang[1], Jun Jiao[1], and Mingbao Li[1]

[1]Qilu Hospital of Shandong University

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A 25-year-old woman presented at 39 weeks and 5 days of gestation, delivering vaginally at 40 weeks and 3 days. Initially, a 5 cm ovarian cyst was detected via early pregnancy ultrasound, remaining asymptomatic. Subsequent monitoring revealed an increase in cyst size to approximately 15 cm. Two days post-delivery, she underwent transumbilical single-port laparoscopic surgery, with a 2.5 cm incision at the umbilicus allowing access for cyst removal. The surgery revealed a 15 cm cyst on the left ovary and an enlarged uterus. Approximately 1500 mL of clear fluid was aspirated via a lotus suture, with the cyst wall excised and the ovary sutured under direct visualization. Immediate pathology confirmed a serous cyst. The patient recovered well and was discharged 48 hours later. Representative surgical images are provided in Fig.1.

During the puerperal period, the uterus enlarges and the adnexa ascend, facilitating their extraction through the single incision. The abdominal wall laxity eases single-port enlargement, aiding in suture placement and improving cosmetic outcomes [1].

Managing ovarian cysts during pregnancy involves risks of adverse outcomes, such as miscarriage or preterm labor [2]. Enlarged uterus poses challenges, increasing risks of complications like ovarian torsion and rupture, necessitating emergency interventions if managed post-delivery [3]. For asymptomatic giant ovarian cysts carried to full term, timely postpartum single-port laparoscopic surgery may be beneficial, leveraging physiological changes to reduce risks and improve surgical outcomes. These findings highlight the importance of optimal timing for surgical intervention in cases of ovarian cysts during pregnancy.

Author Contribution

Mingbao Li contributed to the surgery conception and design. Material preparation and image collection were performed by Zhou Yang and Jun Jiao. The first draft of the manuscript was written by Zhou Yang and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Declarations

Conflict of interests

The authors declare that they have no conflict of interest.

Consent to participate

Written informed consent was obtained from individual and guardian participants.

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Figure legend

Fig.1 (A) The ovary was extracted through the incision; (B) The cyst wall was excised and the ovary was sutured under direct visualization; (C) Postoperative laparoscopic image; (D) Postoperative image of the single port entry.

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