

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20261639>

Case Report

Jain's point - a safe laparoscopic entry technique to avoid bowel injury

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Received: 30 March 2026

Revised: 05 May 2026

Accepted: 06 May 2026

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ABSTRACT

Laparoscopic entry is a critical step in minimally invasive surgery, often associated with iatrogenic complications such as bowel or vascular injury. Jain's Point, a novel entry site located in the left upper quadrant, has been proposed to reduce these risks, especially in patients with previous abdominal surgeries. We present a case where Jain's point allowed safe laparoscopic access in a patient with abdominal wall adhesion with bowel due to prior surgery.

Keywords: Laparoscopy, Jain's point, Bowel injury, Gynaecologic surgery

INTRODUCTION

Laparoscopic approach has become a mainstay in gynecology and general surgery. As explained by Dr. Jain in her paper "Jain point: A new safe portal for laparoscopic entry in previous surgery cases.

Journal of Human Reproductive Sciences", primary trocar insertion poses a risk of iatrogenic injury, particularly in patients with previous abdominal surgeries.

Traditional sites such as the umbilicus may not be ideal due to potential adhesions.

A left paraumbilical point at the level of upper border of umbilicus, situated in a straight line drawn vertically upwards from a point 2.5 cm medial to the anterior superior iliac spine offers a safer alternative, especially in high-risk cases.¹ This case highlights a successful procedure using Jain's point.

CASE REPORT

A 28-year-old married female, married for 5 years, presented with a history of primary subfertility. She is gravida 1 and had a previous ectopic pregnancy for which she underwent laparoscopic right salpingectomy. The procedure was performed for a right tubal ectopic pregnancy. Since then, she has been eager to conceive and has been attempting pregnancy for the past 3 years without success.

Her menstrual history revealed regular cycles with moderate flow, associated with mild dysmenorrhea. Her obstetric history is gravida 1, with a spontaneous conception resulting in a right tubal ectopic pregnancy, which was managed surgically by laparoscopic right salpingectomy.

Her past history is significant for an exploratory laparotomy performed in childhood for foreign body

ingestion. No other significant medical or surgical history was noted.

Examination

On examination, the patient was in fair general condition and was vitally stable. Per abdominal examination revealed a soft, non-tender abdomen with a midline vertical scar and laparoscopic port scars present. Per speculum examination showed a healthy vagina and cervix, with no discharge or bleeding. Per vaginal examination revealed a uterus corresponding to six weeks in size, anteverted, with bilateral fornices free and non-tender.

Investigations

Hysterosalpingography revealed a normal uterine cavity shape and contour; however, both fallopian tubes were not visualized, and there was absence of bilateral peritoneal spill. These findings were suggestive of bilateral isthmic block. Ultrasound of the pelvis showed a normal-sized anteverted uterus with normal bilateral ovarian volume and no free fluid in the pelvis. The sliding sign was positive, indicating no visible pelvic adhesions.

Diagnosis

A 28-year-old married female, married for 5 years, with a history of one previous right tubal ectopic pregnancy managed surgically, presented with secondary infertility and bilateral isthmic block on hysterosalpingography. She was planned for diagnostic laparoscopy with possible adhesiolysis and hysteroscopic left recannulation with chromopertubation. Valid informed written high-risk consent was obtained, and adequate preoperative bowel preparation was performed. On examination, abdominal scars were noted. In view of her prior surgery, the risk of umbilical adhesions was considered high.

Procedure

Under all aseptic precautions, the patient was placed in a supine position under general anesthesia, and parts were prepared. The anterior superior iliac spine (ASIS) was identified, and a vertical line was drawn 2.5 cm medial to the ASIS up to the level of the umbilicus, followed by a horizontal line at the upper margin of the umbilicus. The point of intersection of these two perpendicular lines was identified as Jain's point. A 2 mm skin nick was made at the marked site, and a Veress needle was inserted perpendicular to the anterior abdominal wall until two distinct pops were felt. A low initial intraperitoneal pressure test was performed, followed by insufflation. A primary 5 mm trocar was inserted at Jain's point, and a laparoscope was introduced to examine the abdominal cavity for adhesions. Secondary 5 mm ports were placed under direct vision. Intraoperatively, the uterus was found to be normal in size and anteverted, the right fallopian tube was not visualized, and the left fallopian tube appeared

normal, with both ovaries also appearing normal. Dense adhesions were noted between the bowel and anterior abdominal wall in the supra-umbilical region, confirming a high-risk area for injury. On chromopertubation, a left fallopian tube block was confirmed, and recannulation was attempted but was unsuccessful. All ports were removed under vision, and pneumoperitoneum was released. The procedure was uneventful, with no bowel, visceral, or vascular injury. The patient was discharged on postoperative day one.

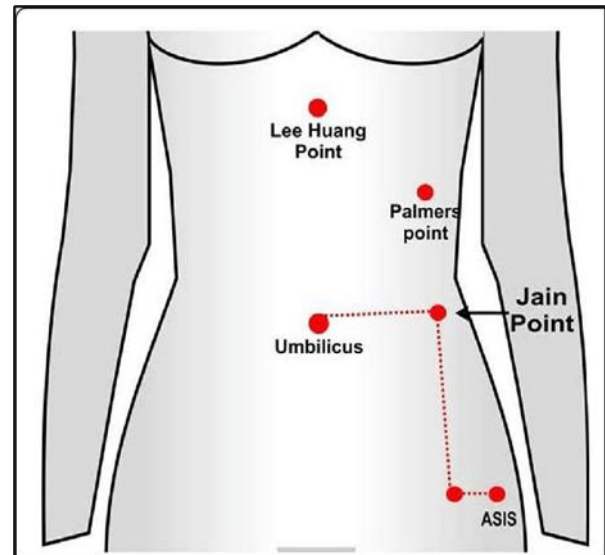


Figure 1: Jain point.

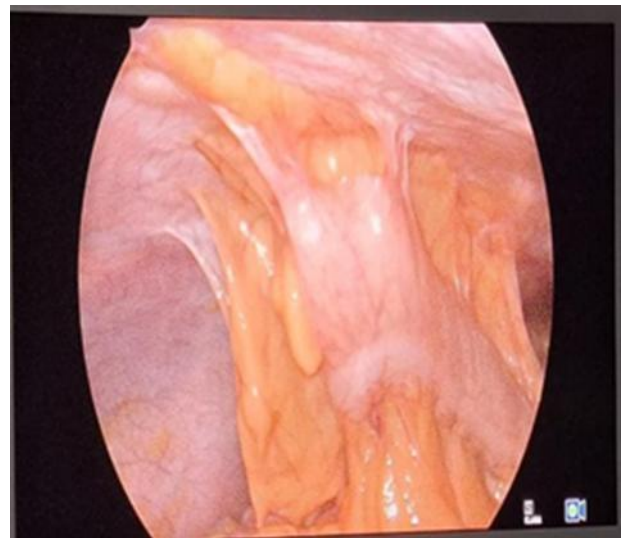


Figure 2: Intraoperative findings: bowel and omental adhesion at Palmer point.

DISCUSSION

The core principle of the Jain Point technique lies in its precise anatomical selection. The rationale behind using Jain point is that the viscera on the left side that is spleen, kidney and bloated stomach lie higher up at T10-L1 level, while sigmoid is physiologically adherent at the pelvic

brim, leaving a large nascent area on the left side. Located at L4 level, approximately 10-13 cm lateral to the umbilicus, the Jain Point is strategically chosen to avoid vital structures, adhesions, and bowel.¹

Additionally, the Jain Point's strategic positioning helps avert the concern of injury to major retroperitoneal vessels, a significant consideration during umbilical entry.² Notably, the superior and superficial epigastric vessels, which often lie within 5 cm of the midline, are also avoided with Jain point entry. In a systematic review, the estimated risks for umbilical and/or anterior abdominal wall adhesions were 50 to 65 percent for those with a previous midline laparotomy.³ non-umbilical access may be preferred under these circumstances.⁴

This is consistent with the findings in our case, which show Jain point's feasibility in multiple previous surgeries. Palmer's point has been relied on for years in patients with history of previous surgeries. But as the number of previous surgeries and complexity of surgical indications have increased, various contraindications of Palmer's point have emerged like previous gastric surgery.⁵

CONCLUSION

In this case, the bowel was found stuck completely over Palmer's point making it redundant while Jain point situated left laterally in mid abdomen, served as the main ergonomic working port as a camera port. It effectively prevented a potential bowel injury and facilitated a successful laparoscopic procedure.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Lal CS, Kumari B, Sureddi P, Ahire K. Jain's point -a safe laparoscopic entry technique to avoid bowel injury. *Int J Reprod Contracept Obstet Gynecol* 2026;15:2242-4.