Early Ureteric Identification in Extraperitoneal Left-Sided Colorectal Resections

Background:

Failure to locate the left ureter and the risk of ureteric injury are significant concerns for colorectal surgeons performing minimally invasive procedures. Various adjunctive methods have been employed to assist in identifying the left ureter intraoperatively. The extraperitoneal approach offers direct and early access to retroperitoneal structures. This study aimed to evaluate the time taken to positively identify the left ureter and assess ureteric injuries during minimally invasive left-sided colorectal resections.

Methods:

A prospective database was reviewed, including all minimally invasive left-sided colorectal resections performed using a novel extraperitoneal approach between February 2020 and August 2024. Comprehensive data on preoperative, intraoperative, and postoperative outcomes were collected. A new parameter, "time to ureter identification," was measured from the skin incision at the start of surgery. Data were recorded in real time on a standardized proforma and incorporated into the database.

Results:

A total of 108 patients were included, with 41 females and a median age of 64 years (IQR 60-72). The median BMI was 27 (IQR 25-32). The majority of cases (97 patients) involved cancer, while 11 cases were for complex diverticular disease. The most common procedure was a high anterior resection (46%), followed by low anterior resection (27%). In 88 of 108 patients (82%), the time to left ureter identification was recorded. In 12% of cases, the ureter was identified but not documented. The median time to ureter identification from skin incision was 35 minutes (IQR 19-35). Ureter identification consistently guided dissection in the correct anatomical plane.

Conclusion:

The extraperitoneal approach facilitated early and reliable identification of the left ureter during minimally invasive left-sided colorectal resections, reducing the risk of ureteric injury. This method did not require additional invasive or non-invasive ureter identification techniques. The time to ureter identification could be considered a new safety metric in colorectal surgery.