3-port laparoscopy with transvaginal or transrectal natural orifice specimen extraction (NOSE): the next step in minimally invasive colorectal surgery

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Introduction

Natural orifice specimen extraction (NOSE) replaces the need for conventional transabdominal extraction, reducing the surgical wound size. 3-port laparoscopic surgery (3PLS) with 1 camera-port and 2 operator-ports has been demonstrated to be feasible. We aimed to report our experience with colorectal 3PLS in addition to NOSE.

Methodology

From 20 January to 20 July 2021, data for all cases of elective colorectal 3PLS with NOSE was prospectively recorded. Both malignant and benign diagnoses were included. Patients with T4 or N2 tumours on staging computed tomography were excluded.

Results

Over the six-month study duration, 13 consecutive cases (8 female, 5 female) of elective 3PLS with NOSE were performed. All were cases of colorectal cancer except two; one sigmoid volvulus and one recurrent diverticular bleeding. Eight patients underwent anterior resection (of whom three had defunctioning ileostomy), two underwent D3 right hemicolectomy, one left hemicolectomy, one sigmoid colectomy, and one subtotal colectomy.

Six underwent transrectal and seven transvaginal NOSE surgery. Median age and body mass index (BMI) were 73 (range 43-82) years and 24.3 (range 20.0-31.7) kg/m² respectively.

Median operative time, intra-operative blood loss and post-operative length of stay were 235 (range 165-365) minutes, 30 (range 10-150) ml and 3 (range 3-6) days respectively. All patients recovered gastrointestinal function with passage of flatus and stool within the first two post-operative days. Overall complication rate was 23% (n=3), although all were minor without requiring re-operation. No complication was attributable to the extraction or reconstruction technique.

Conclusion

Colorectal 3PLS with NOSE is feasible, safe and together augment the minimally invasive nature of surgery to produce excellent cosmesis and short-term outcomes. Careful patient selection is required as well as experience to surmount the learning curve.