



A Study of multi-speciality joint Robotic Assisted Surgery involving Gynaecology in a District General Hospital



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Introduction

Robotic-assisted surgery (RAS) has revolutionized modern surgical practice. In complex cases involving overlapping anatomical and pathological concerns, the integration of multi-specialty expertise becomes crucial.

Objectives

This study explores the outcomes of multi-specialty joint RAS cases involving Gynaecology that have been performed in the DGH of Raigmore Hospital with the primary aim of understanding their surgical outcomes. In this hospital, RAS is offered in Gynaecology, Urology and Colorectal surgery. We aim to highlight the benefits, potential challenges, and practical considerations of this collaborative approach in managing complex surgical conditions.

Design

A retrospective single centre study using patient data from NHS Highland.

Methods

In Raigmore Hospital, ongoing data collection is mandated for all RAS cases since its introduction in September 2021. Cases who have had multi-specialty procedures involving Gynaecology were identified and included in this study. This list was cross checked with Colorectal and Urology. Information on the following was collated from online records on SCI-Store and hospital theatre system Aqua: indication of surgery, patient demographics of age and ASA, surgical outcomes of length of surgery, EBL, open conversion, complications and length of inpatient stay.

Results

From Sept 2021 – Dec 2024, 14 patients had multi-specialty RAS involving Gynaecology. Gynaecology was the primary specialty in 71% of cases.

7 patients (50%) underwent surgery due to a malignancy of either colorectal or gynaecological primary. Other indications were stage IV endometriosis, hydrosalpinx, pelvic cysts with multi-organ involvement and pelvic pain.

Range of patient age was 37-83 years. ASA score ranged from 1-3 (mod of 2). The average length of surgery was 4 hours 42 minutes. 7 cases (50%) were planned joint procedures and resulted in no intraoperative complications. Of the 7 cases of unplanned joint involvement, 2 were due to intraoperative complications of bowel perforation. There was one open conversion in a patient with previous history of panproctocolectomy. Dense bowel adhesions to anterior abdominal wall meant that no minimal access ports could be safely secured in this case. There were no other cases where the secondary specialty involved had to use non-robotic surgical routes. Range of length of stay was 1-21 days (median of 2 days). 11 patients had an EBL<200ml, 2 had an EBL of <500mls. The 1 patient who required open conversion had an EBL of 900mls. 2 patients encountered postoperative complications of Clavien Dindo grade 3. One was of abdominal wall haematoma and another developed ischaemic bowel conduit following colorectal surgery. Both cases required return to theatre.

Case study

A 38 year old patient was born with congenital bladder exstrophy and had multiple past reconstruction surgeries including ureterosigmoidostomy. Her last surgery was a midline laparotomy in her teens to remove a pelvic peritoneal cyst involving the left tubo-ovary. The comment in her historical

op notes was ‘findings were complicated’.

On this occasion, she presented acutely with abdominal pain and renal impairment. MRI showed complex anatomy with recurrence of a large pelvic peritoneal cyst likely formed by adhesions. The cyst contained the left tubo-ovary and endometriomas with both ureters seen coursing into this cyst. The sigmoid closely abutted it. Bilateral nephrostomies and CT guided cyst drainage were performed but the cyst re-accumulated.

Joint Gynaecology and Urology RAS removal of pelvic cyst was planned with a high possibility of ileal conduit. Indocyanine green was injected through the nephrostomies to delineate the ureters which proved vital to track their course through dense adhesions. The enhanced surgical precision offered by RAS meant that safe adhesiolysis could be performed to unveil a left pelvic mass comprising of left tubo-ovary and endometrioma. Left salpingo-oophorectomy was performed. There were no operative complications and EBL was minimal. The operative time was 2 hours. The patient was discharged on Day 1 with only simple analgesia required. A 3 month follow up ultrasound showed no re-accumulation.

Discussion

Multispecialty RAS introduction into any hospital is favoured rather than isolated specialty use. This would facilitate joint surgery on complex patients who would otherwise have received open surgery or other less favoured non-surgical treatments, as highlighted in the case study above. Joint RAS involvement also promotes cross specialty learning and exchange of RAS skills. The prolonged length of operating time likely reflects the complexities of such cases. However, shorter hospital stays and reduced EBL are potential benefits when compared to open surgery.