



Introduction:

Robotic surgery is a new and increasingly popular minimally invasive surgery modality. Endometrial cancer (EC) is the most common gynaecological malignancy in the developed world, and atypical endometrial hyperplasia (AEH) is a precursor. Primary treatment of AEH and EC is total hysterectomy and bilateral salphingo-oophorectomy, with a minimally invasive approach, laparoscopic or robotic, preferred to open hysterectomy (TAH). In January 2023 our regional hospital was the first in Australia to introduce public Robotic Assisted Laparoscopic Hysterectomy (RALH) for EC and AEH. Our hospital previously managed these patients with TAH. Robotic surgery has workforce benefits like recruitment, training opportunities and retention which are important for a regional Australian public hospital.

Aims:

The aim of the study was to audit the surgical outcomes of RALH compared to TAH and assess if it impacted surgical outcomes for patients.

Methods:

Retrospective cohort audit of patient outcomes comparing AEH and EC surgical management 12 months before and after access to public robot. Group 1 underwent TAH between 01 Jan 2022–31 Dec 2022, Group 2 underwent RALH between 01 Jan 2023–16 Jan 2024. All surgeries were performed by same primary surgeon. Charts were manually reviewed.

Results:

8 patients underwent RALH between January 2023– January 2024, and 14 patients underwent TAH between January – December 2022. There was no significant difference between RALH and TAH groups in demographics including kilometres patients travelled to hospital(Table 1). Operating time was significantly longer in RALH group compared to TAH (mean operating time 103 vs 66 min,p=0.0002). There was no significant difference in length of stay, intra-operative or post-operative complications, or readmission to hospital within 28 days(Table 2).

Table 1: Patient demographics

	RALH (n = 8)	TAH (n = 14)	P value
Mean age (years)	64.6 +/- 11.54 (41 – 81)	63.1 +/- 6.41 (54 – 73)	0.687
Mean BMI (kg/m ²)	38.5 +/- 6.15 (31.2 – 46.3)	37.1 +/- 8.33 (22.6 – 49.9)	0.685
Mean distance from hospital (km)	34.9 +/- 35.65 (2 – 89)	68.1 +/- 76.62 (2 – 235)	0.265
Smoker, n (%)	0	2 (14.28%)	0.284
Diabetes	3 (37.5%)	0	0.012

Table 2: Outcomes by mode of surgery

	RALH n (%)	TAH n (%)	P value
Mean operating time (mins)	103.3 +/- 30.25	66.4 +/- 7.62	0.0002
Intra-operative complications	0	0	
Conversion to laparotomy	0	N/A	
Post-operative complications	1 (12.5%)	2 (14.28%)	0.912
Re-admission to hospital	0	2 (14.28%)	0.284
Mean length of hospital admission (days)	2.38 (Range 1-5)	3.21 (Range 2-5)	0.061

Discussion:

In the 12 months following public robot access in our regional Australian hospital, RALH has been a safe surgical treatment for the treatment of AEH and EC. RALH had a longer mean operating time compared to TAH in our small sample size audit. Patient access appeared to be similar across both groups. Further studies are warranted in terms of larger sample size and cost analysis. Robotic surgery in a regional public hospital provides training opportunities and aids workforce recruitment.