

Robot-Assisted Intracorporeal Ileal Conduit in Advanced Multiple Sclerosis: Feasibility, Morbidity, and Quality of Life Outcomes

Nour Khalil, Martina Moriconi, Fabienne Lehner, Maria Lucia Gallo, Marady Hour, Elena Scanferla, Thibaut Germain, Claire Hentzen, Véronique Phé

Tenon Hospital - Sorbonne University, Department of Urology, Paris, France

INTRODUCTION

Neurogenic lower urinary tract dysfunction affects most patients with multiple sclerosis (MS) compromising QoL and upper urinary tract function. In refractory cases ileal conduit (IC) diversion may be indicated. Robot-assisted surgery may reduce this perioperative morbidity.

AIM: Evaluate surgical and functional outcomes of totally intracorporeal robot-assisted cystectomy with IC in MS patients.

RESULTS

Table 1: Patient's characteristics

	Median	IQR
Age at surgery (years)	57	51-53
Body Mass Index (kg/m2)	23	20-28
Preoperative EDSS	8	7-8
Duration of disease (years)	20	15-27
Functional status		
Any walking impairment	24	96%
Wheelchair-bound	22	88%
Voiding pattern at time of surgery		
Permanent bladder catheter	11	44%
Intermittent self-catheterisation	10	40%
Intermittent assisted-catheterisation	4	16%
Main indications for urinary diversion		
Impossibility to self-catheterize	10	40%
Recurrent urinary tract infections	2	8%
Renal function impairment	2	8%
At least two of the above	11	44%

Table 3: Late Postoperative Outcomes

Outcome	n	rate
Discharged by 3 weeks	21	84%
No ureteral stents at discharge	14	56%
Readmissions (0–6 months)	17	68%
Readmissions (6–12 months)	6	24%
Endoscopic reinterventions	11	44%
Febrile Urinary Tract Infections (>3/year)	3	12%
Multiple Sclerosis progression	3	12%
Surgical reinterventions	3	12%

METHODS

- Retrospective
- Single-center
- 2021 -> 2025
- Inclusion : MS patients undergoing robot-assisted cystectomy with IC

- Population: 25 patients (16 ♀), 68% ASA 3
- Median follow-up 15 months
- Median operative room time 210 minutes, no conversions to open
- Median hospital stay : 16 days

Overall, 72% experienced Clavien I–II complications and 44% Clavien III–IV.

Table 2: Early post-operative complications (during initial hospital stay)

Complication type	n	Management
Grade I		
Hypokalemia	6	Potassium supplementation
Delayed transit	2	Parenteral nutrition
Wound infection	1	Wound care
Grade II		
Pyelonephritis	9	Antibiotics/Antimycotics
Anemia	4	Blood transfusion
Bowel occlusion	2	Nasogastric tube insertion
Deep-vein thrombosis	1	Anticoagulation
Pulmonary embolism	1	Anticoagulation
Grade III		
Obstructive pyelonephritis	4	Ureteral stenting
Acute loss of ureteral stent	2	Repositioning under anesthesia
Ureteral stent clotting	1	Percutaneous nephrostomy
Refractory bowel occlusion	1	Bowel resection and diversion
Gastro-intestinal bleeding	1	Gastroscopy
Grade IV - Managed in the intensive care unit		
Septic choc (urinary)	1	Vasopressors
Diabetic acidocetosis	1	Resuscitation

At 1 year, renal function remained stable (median eGFR preop 110 vs. postop 112 mL/min; p=0.54), while QoL significantly improved (Qualiveen-SF preop 2.0 vs. postop 0.75; p=0.01).

Totally intracorporeal robot-assisted IC diversion is feasible in selected MS patients and provides significant QoL improvement without renal deterioration. However, early morbidity and readmission rates are high, emphasizing the need for careful patient selection and postoperative management.