Early Robotic Liver Transplant Experience in the United States: A Case Series

AL Hill, *AZ Kiani, MD Scherer, DR Cullinan, JR Wellen, WC Chapman, MB Doyle, AS Khan*

WashU MEDICINE

Introduction

- Liver transplant is the only treatment for ESLD
- The robotic liver transplant is a novel operation, limited by unique technical challenges

Objective

- **Describe the first case series of robotic liver transplants (RLTs) in the U.S.**

Methods

- Retrospective review of all adults undergoing robotic-assisted liver-only transplant
  - Total RLT: both hepatectomy and implantation performed robotically
  - Hybrid RLT: robotic hepatectomy and open implantation via midline incision

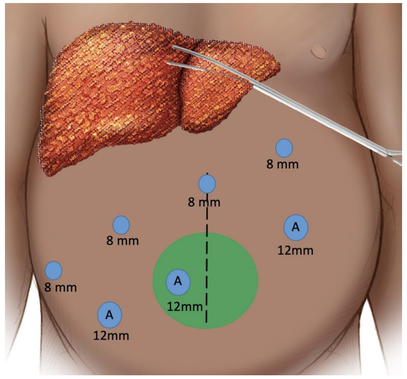


Figure 1. *Port placement*

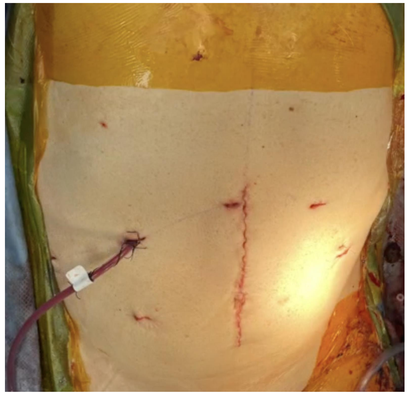


Figure 2. *Final incisions*

Table 1. Recipient, Donor, Operative Details

	Recipient					Donor				OR
	Age	Male	BMI	MELD	HCC	DCD	NMP	NRP	HCV NAAT+	Hybrid
1	64	0	23.2	17	0	0	0	0	0	1
2	68	1	26.5	10	1	0	1	1	0	0
3	58	0	28.4	17	0	1	1	1	0	1
4	65	1	30.1	9	1	1	0	1	0	1
5	40	1	29.3	20	0	0	0	0	1	0
6	60	0	23.4	19	0	0	1	0	0	0

Table 2. Operative and Postoperative Details

	Admission		Postoperative Course					
	ICU LOS	LOS	HAAT	PVT	ERCP	Re-TXP	RTOR	Death
1	2	10	0	0	0	0	0	0
2	5	13	0	0	0	0	0	0
3	6	11	0	0	0	0	0	0
4	6	9	0	0	0	0	0	0
5	2	9	0	0	0	0	0	0
6	2	9	0	0	0	0	0	0

Results

- Three patients (50%) underwent total robotic transplants and three, hybrid
- Median operative time was 9.5 hours; median WIT for total RLTs was 77 minutes
- Median ICU stay 5 days; overall LOS, 10 days
- No instances of early allograft dysfunction or rejection
- **No readmissions, retransplantations, or deaths**

Conclusion

- Robotic liver transplantation is a safe operation, given appropriate candidate selection and clinical team training
- With more experience, we anticipate that RLTs will become more prevalent nationally