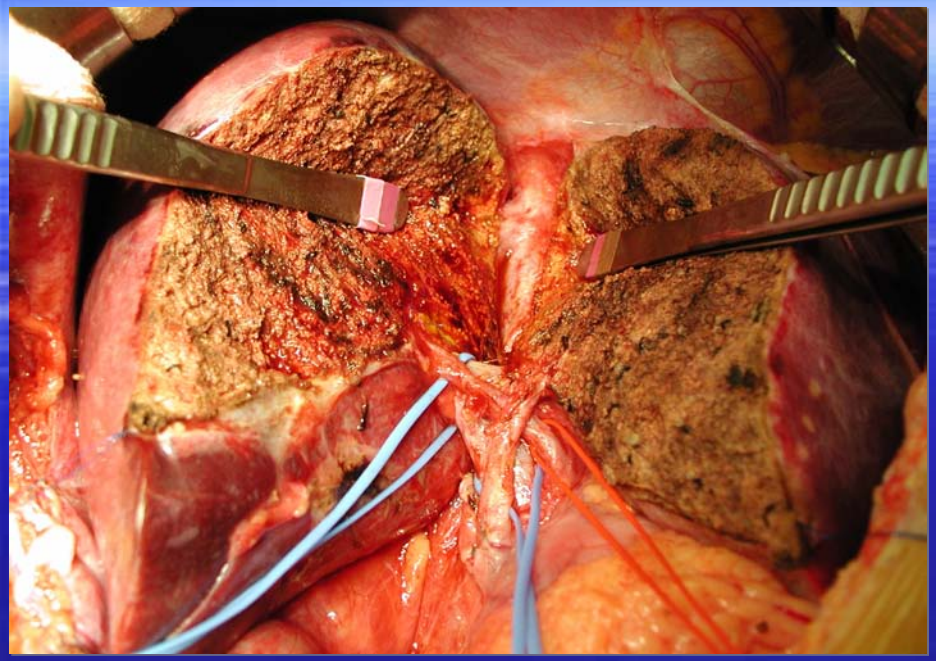
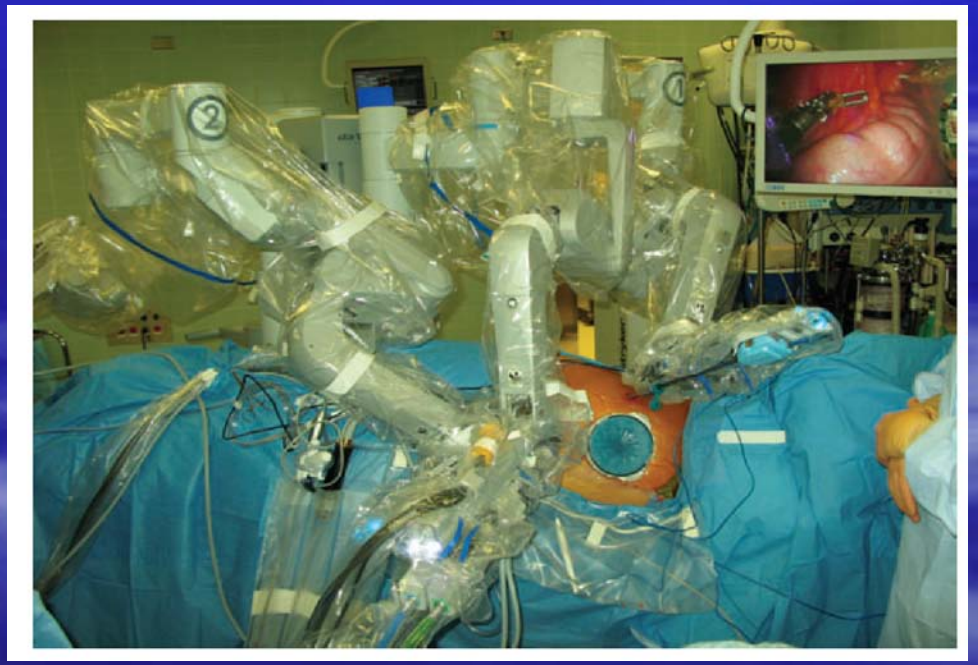
A Current Update in Transplantation

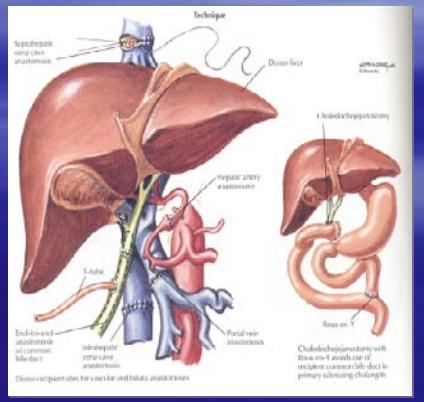


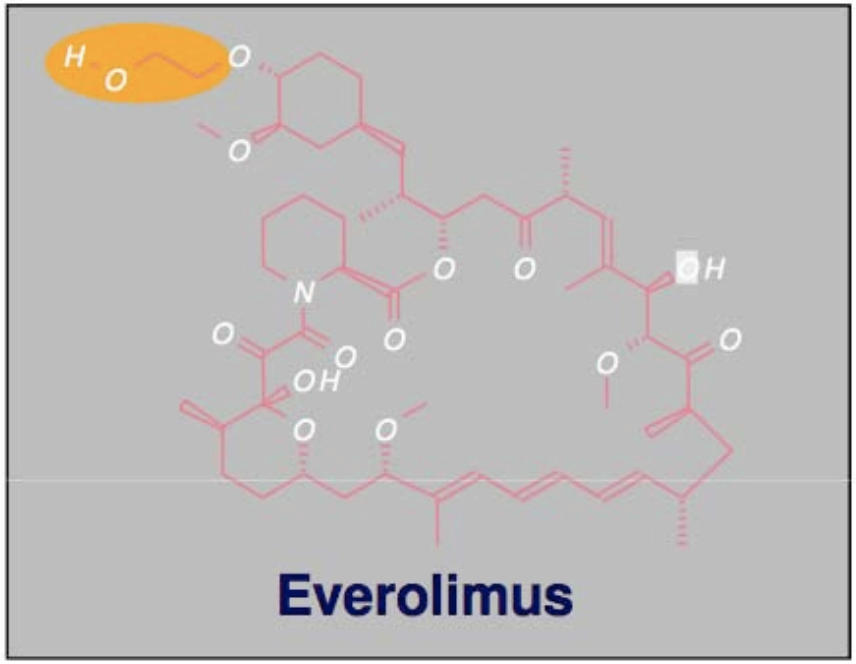


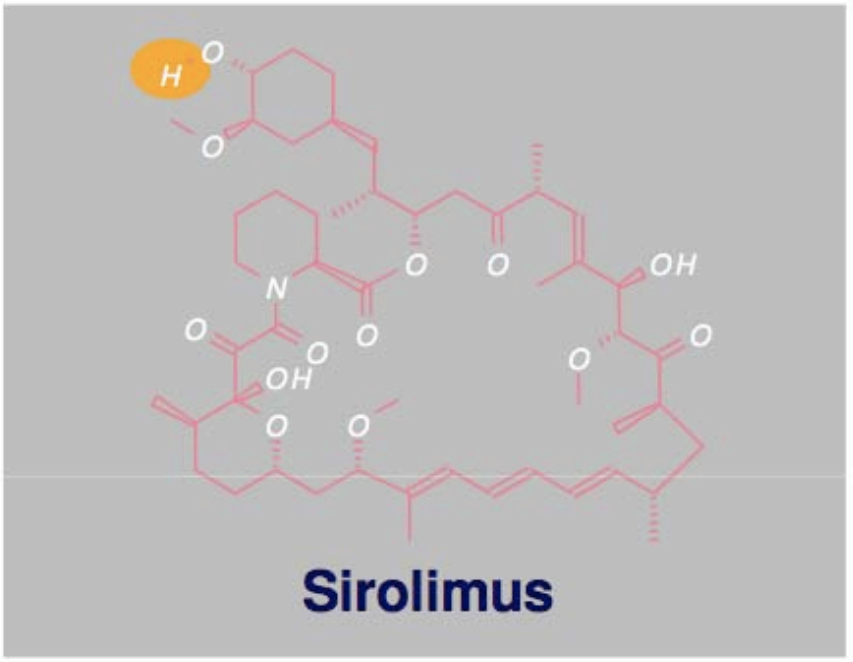
I Kam, M Wachs, T Bak, MA Zimmerman
Division of Transplant Surgery

Current Update in Transplantation

- Trends in Immunosuppression
- LDLT: right versus left
- Surgical Advances in Kidney Transplantation

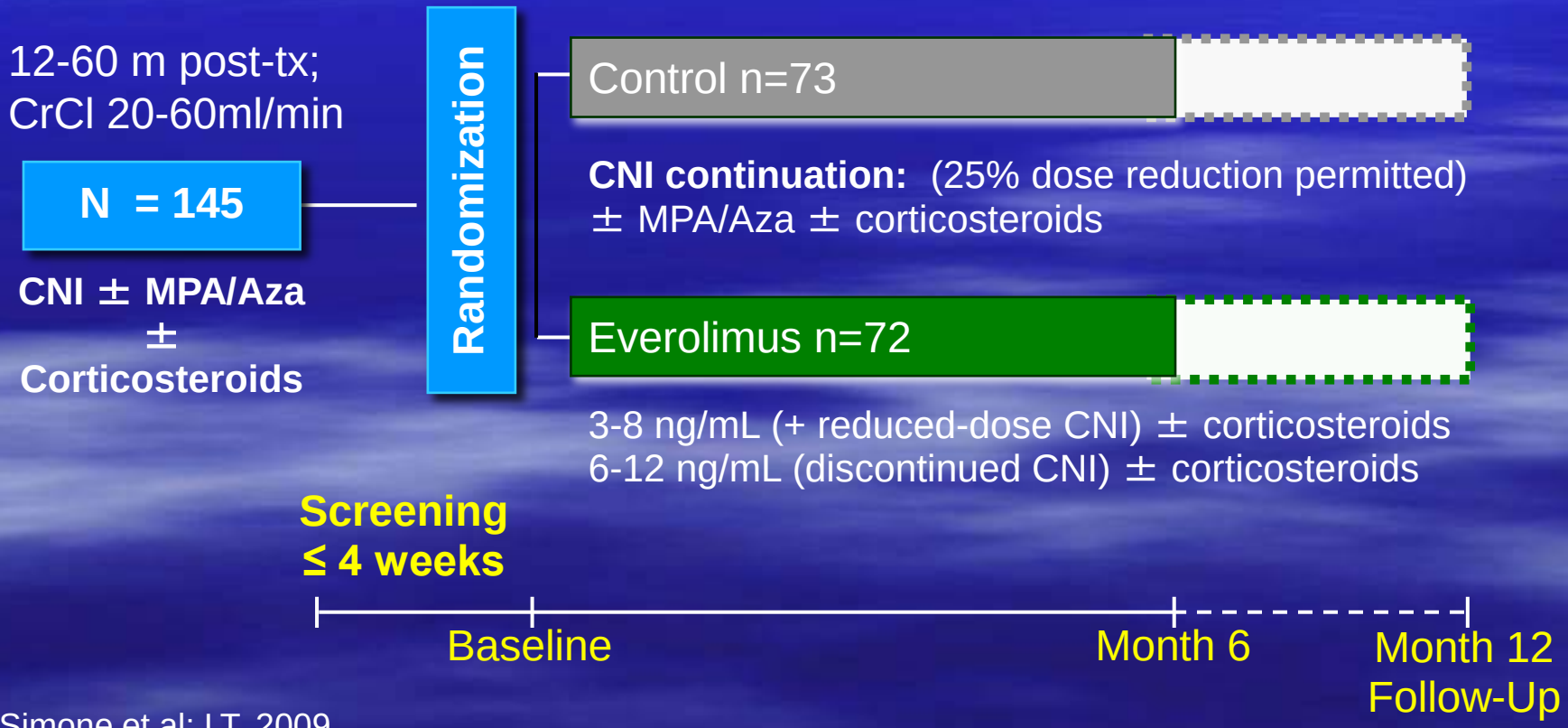



Everolimus


Sirolimus

Study Design: 2401 (RESCUE) Everolimus for Maintenance after Liver Transplantation

Primary Objective: Determine whether initiation of everolimus with reduction or elimination of CNI improves renal function in maintenance liver transplant patients with CNI-related renal impairment



DeSimone et al: LT, 2009

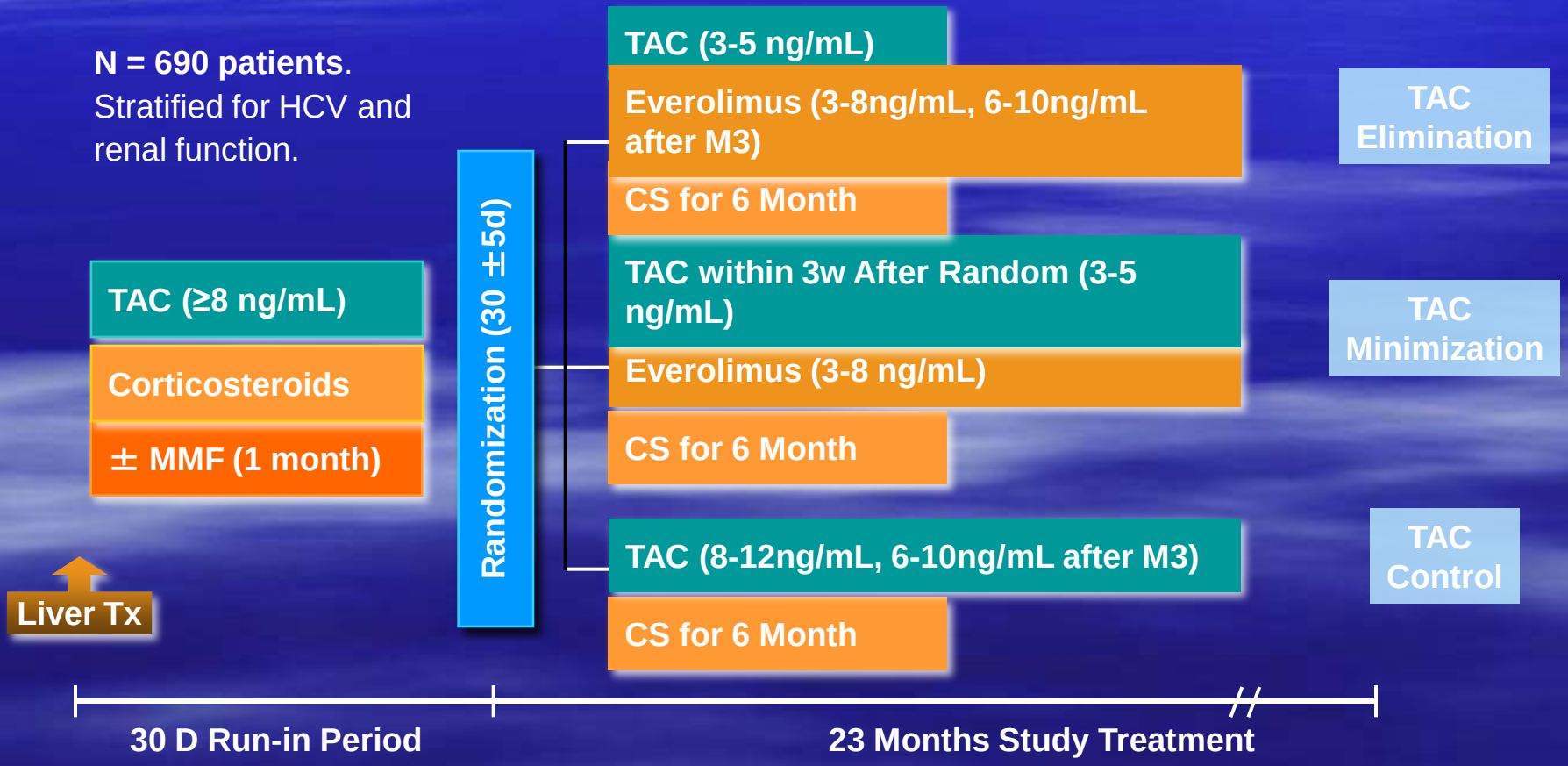
Everolimus with CNI Minimization/Elimination Has Comparable Efficacy to MPA/AZA with Standard CNI

Efficacy Endpoint	Everolimus N = 72 n (%)	Control N = 73 n (%)
Month 1 – 6		
BPAR	1 (1.4)	1 (1.4)
Graft loss	0	0
Death	1 (1.4)	0
Month 7 – 12		
BPAR	2 (2.8)	0
Graft loss	0	0
Death	2 (2.8)	2 (2.7)

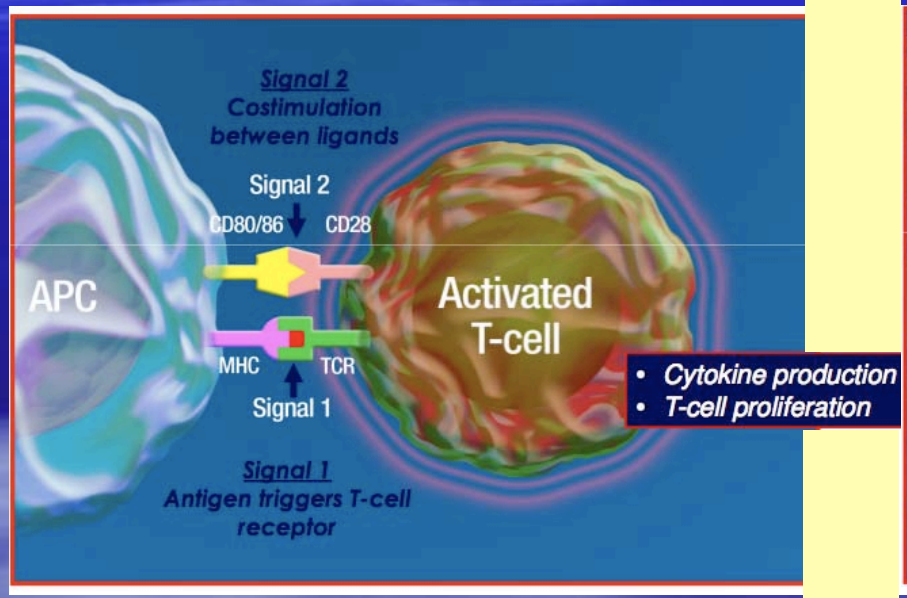
DeSimone et al: LT, 2009

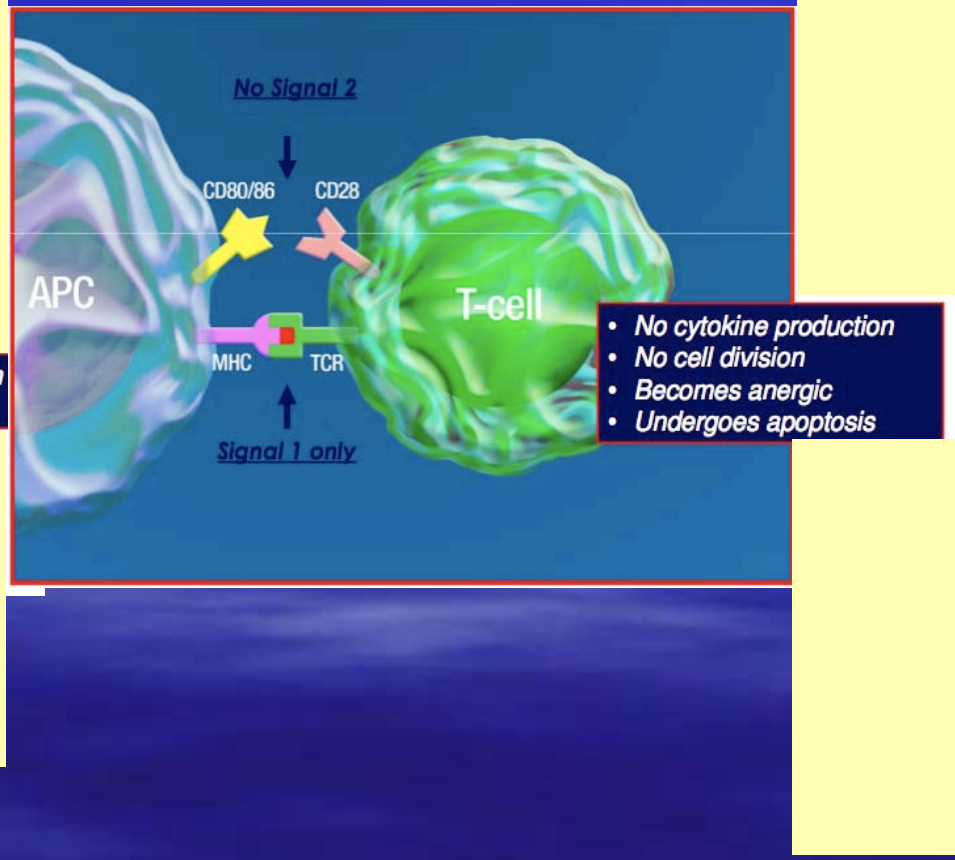
RAD001H2304 – Study Design

Evaluate use of concentration-controlled everolimus, with ***reduction*** or ***elimination*** of tacrolimus, to provide superior renal function and non-inferior rates of the composite efficacy endpoint

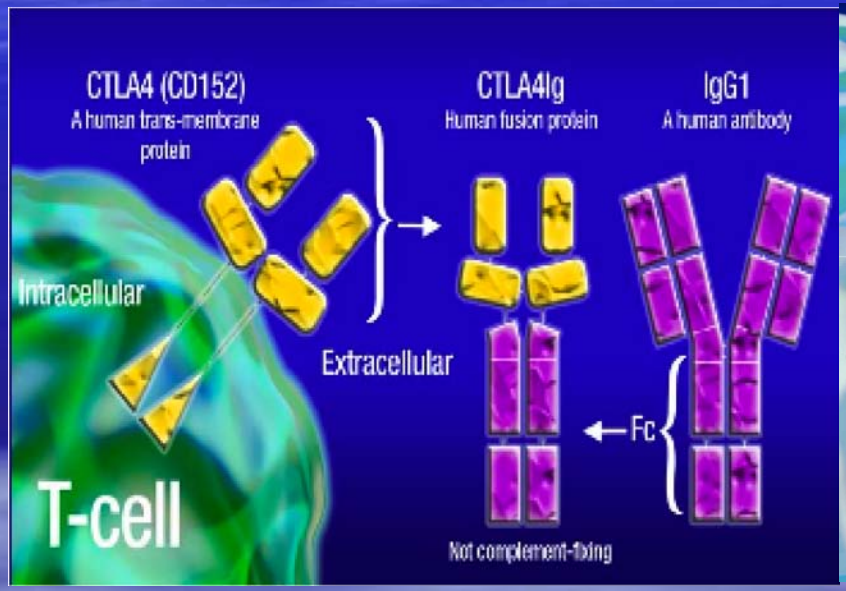


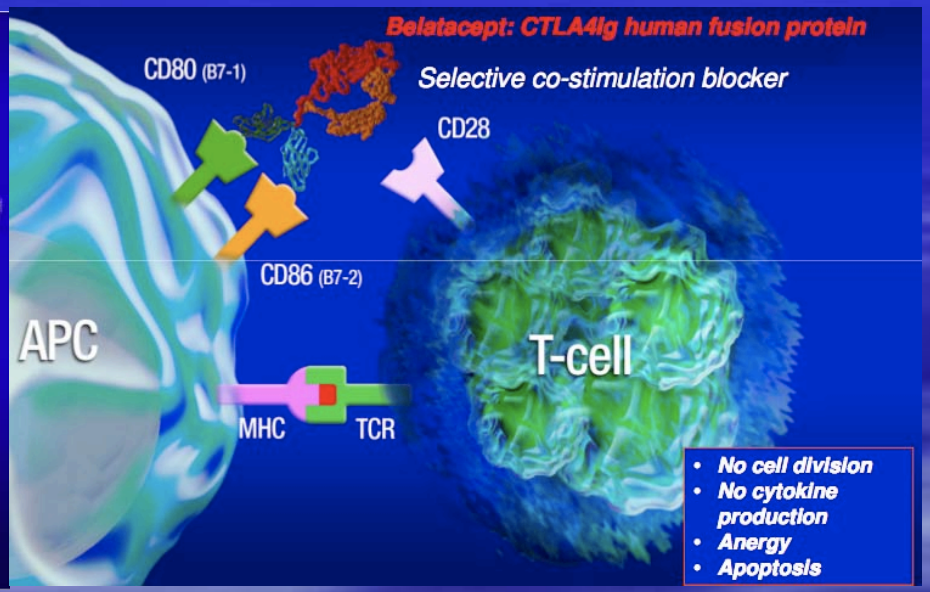
Co-Stimulatory Blockade





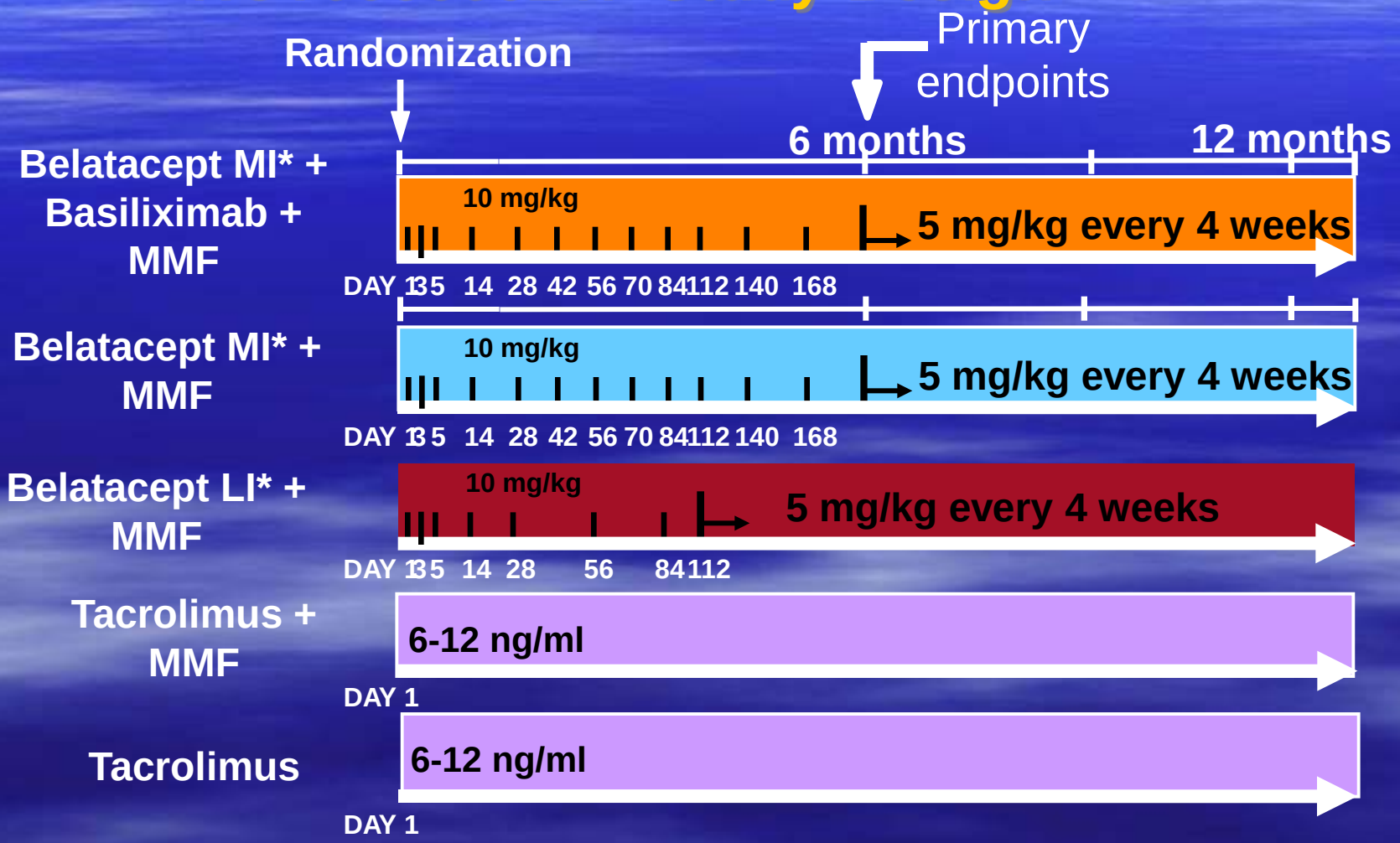
CTLA-4Ig and LEA29Y





CTLA4Ig is a novel fusion protein that interferes with T cell costimulation by inhibiting the CD28-B7 interaction

Belatacept in Liver Transplant Recipients
NCT00555321: Study Design



LI = less intensive; MI = more intensive.

NCT00555321: Endpoints

- Primary Efficacy Outcome Measure
  - Triple composite: AR, graft loss, death at 6 months
- Secondary Efficacy Outcome Measures
  - Patient and graft survival at 6 and 12 months
  - Triple composite: AR, graft loss, death at 12 months
  - Incidence, severity, treatment, and outcome of AR at 3, 6, 12 months
  - Change in renal function over time
  - Incidence of recurrent HCV
  - Metabolic and cardiovascular co-morbidity
  - pK and overall safety of Belatacept®

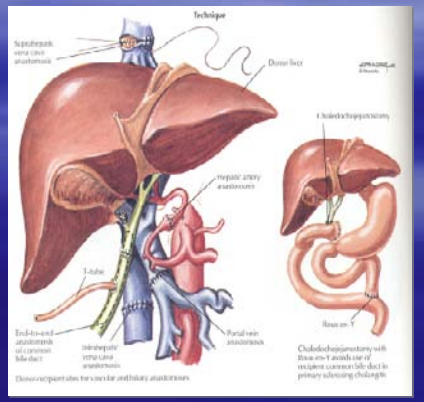
Outcomes at 1 Year (except as indicated)	Patients Randomized and Transplanted (ITT)				
	Basi+Bela HD*+MMF (n=50)	Bela HD*+MMF (n=48)	Bela LD*+MMF (n=49)	Tac+MMF (n=53)	Tac (n=50)
Primary endpoint (composite of graft loss, death, AR at 6 mo), n (%)	24 (48.0)	20 (41.7)	23 (46.9)	8 (15.1)	19 (38.0)
Patients surviving with functioning graft, n (%)	45 (90.0)	40 (83.3)	33 (67.3)	49 (92.5)	44 (88.0)
- Deaths, n	4	7	10	1	4
- Graft loss, n	2	2	8	4	4
Acute rejection, n (%)	22 (44.0)	16 (33.3)	16 (32.7)	7 (13.2)	15 (30.0)
Mean cGFR, mL/min/1.73m^2	83.8	97.7	85.6	68.4	63.8
Systolic/diastolic blood pressure, mm Hg	125.8 / 76.5	127.0 / 78.5	121.2 / 74.5	137.0 / 80.3	138.0 / 79.5
NODM, n (%)	11 (35.5)	5 (15.6)	5 (13.9)	9 (23.7)	14 (37.8)
SAEs of infections, n (%)	11 (22.0)	12 (25.0)	13 (26.5)	12 (22.6)	12 (24.0)
HCV recurrence, n (%)	14 (60.9)	7 (30.4)	6 (28.6)	13 (52.0)	9 (37.5)
AEs of Nervous System	23 (46.0)	19 (39.6)	15 (30.6)	34 (64.2)	34 (68.0)
- Headache, n (%)	10 (20.0)	8 (16.7)	5 (10.2)	14 (26.4)	14 (28.0)
- Tremor, n (%)	2 (4.0)	2 (4.20	4 (8.2)	17 (32.1)	13 (26.0)

*HD and LD: Dose similar to renal MI and LI regimens, respectively, with an additional dose of belatacept on Day 3.

Basi=basiliximab; Bela=belatacept; HD=high dose; LD=low dose; MMF=mycophenolate mofetil; Tac=tacrolimus; AR=acute rejection; cGFR=calculated GFR; NODM=new-onset diabetes mellitus; SAEs=serious adverse events; HCV=hepatitis C virus; AEs=adverse events

Current Update in Transplantation

- Trends in Immunosuppression
- LDLT: right versus left
- Surgical Advances in Kidney Transplantation



Evolution of Living Donor Graft Selection

1989 — 1st LDLT using Lateral segment graft

1993 — 1st adult LDLT using Left lobe graft

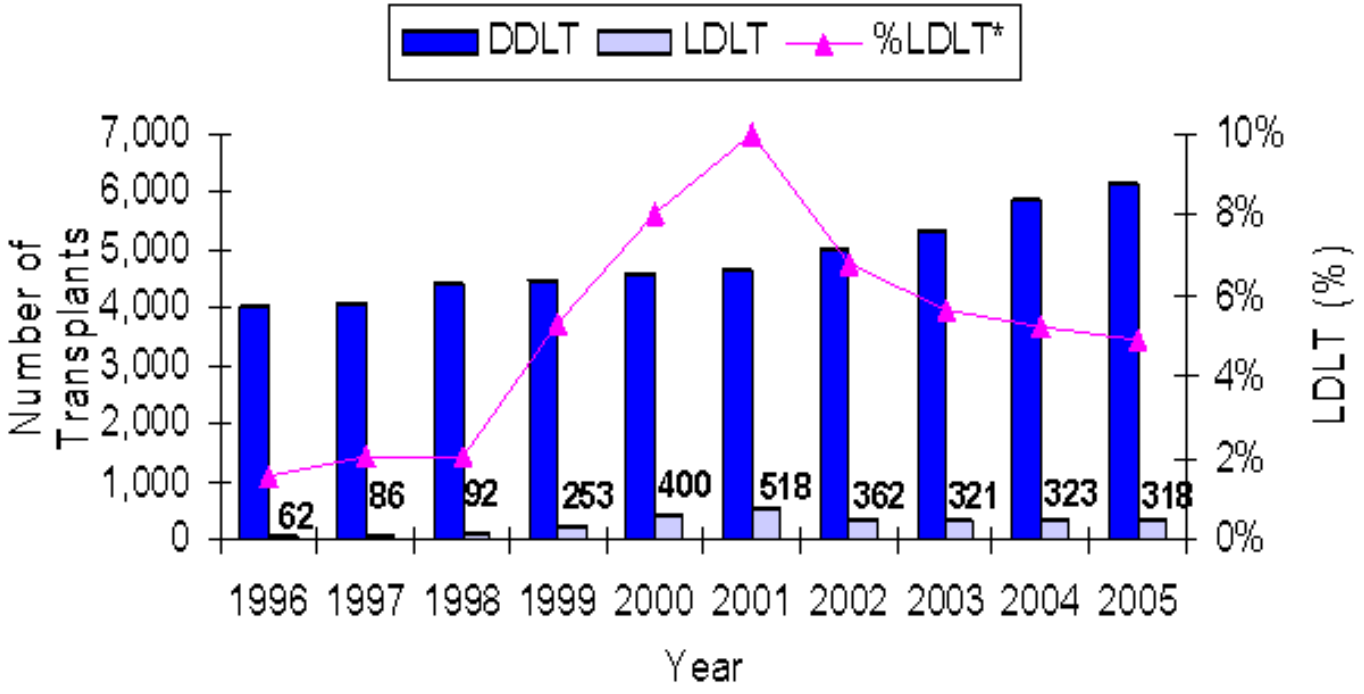
1996 — 1st adult LDLT using Right lobe graft

Accelerated an increase in adult-adult LDLT

w MHV vs. w/o MHV

Increased donor morbidity and mortality

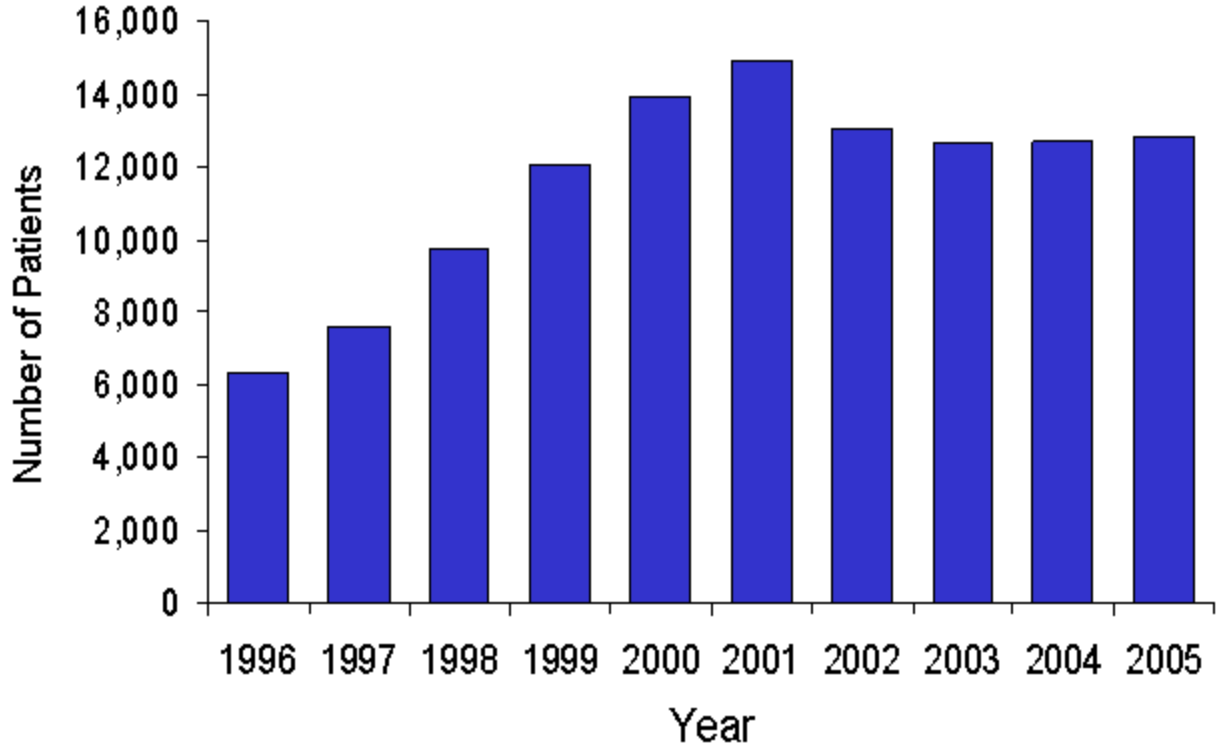
Figure V-12. Number of Liver Recipients by Type of Transplant and Year, 1996-2005



*LDLT as percentage of the total number of liver transplants

Source: *2006 OPTN/SRTR Annual Report*, Tables 9.4a and 9.4b.

Figure V-1. Number of Patients on the Liver Waiting List, Active at Year-End, 1996-2005



Source: *2006 OPTN/SRTR Annual Report*, Table 9.1a.

Evolution of Living Donor Graft Selection

1989 – 1st LDLT using Lateral segment graft

1993 – 1st adult LDLT using Left lobe graft

1996 – 1st adult LDLT using Right lobe graft

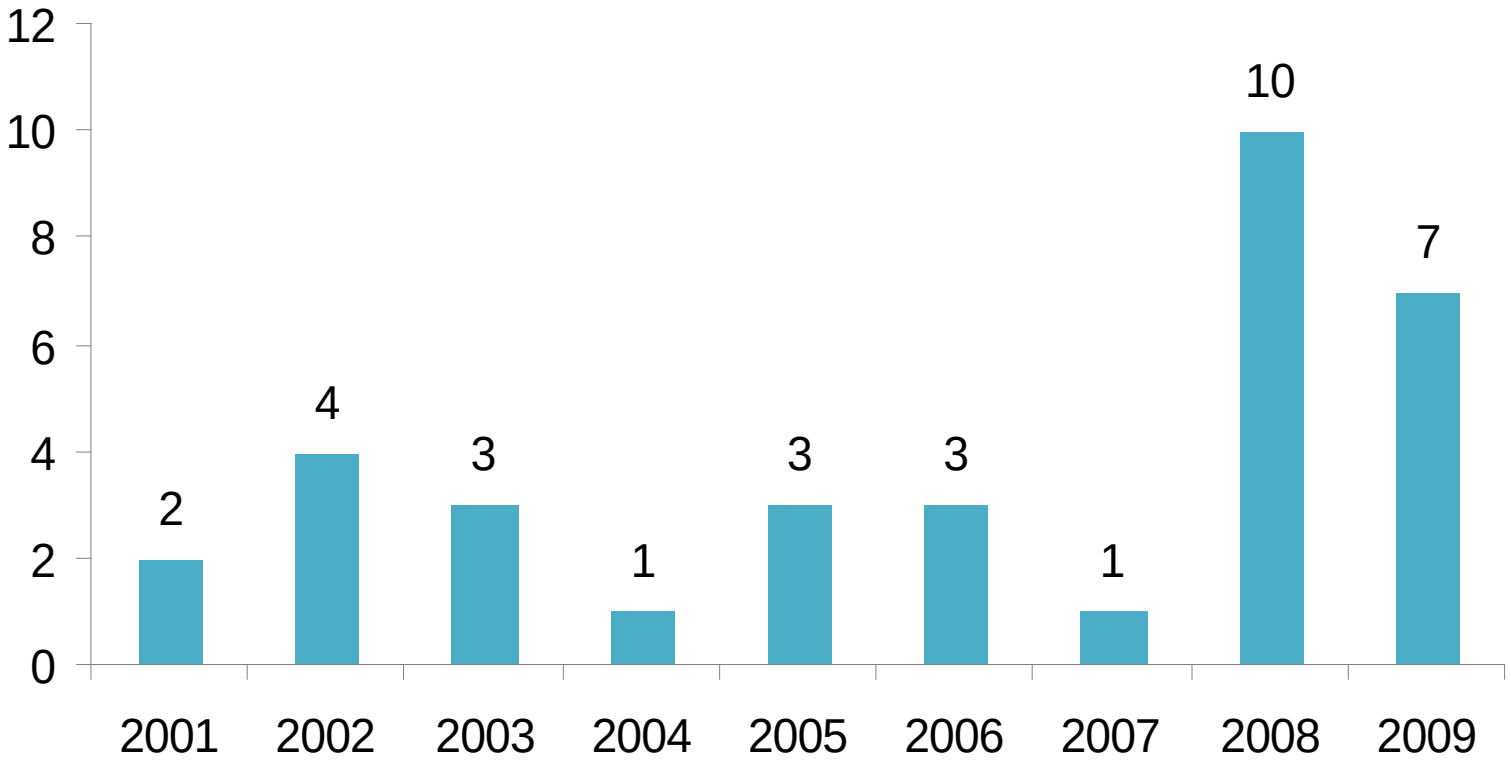
Accelerated an increase in adult-adult LDLT

- w MHV vs. w/o MHV
- Increased donor morbidity and mortality

Present – Right lobe w/o MHV vs. Left lobe

- Based on expected recipient outcome, portal hemodynamics and donor safety.

“Left Lobe” in the Title of Publications for LDLT



Donor Deaths

Vancouver Forum: Transplantation 2006 - Updated

3 Left Liver

US	1
Brazil	1
Germany	1

11 + (5) = 16 Right Liver

US	4	Egypt	1
Brazil	2	China (HK)	1
Germany	2	India	1 (1)*
France	1 *(1)*	*S. America*	*1*
Japan	1		

- 4 Right lobe Donors have had remnant loss and liver transplantation
- 1 Right lobe Donor is in a persistent vegetative state *

Right liver donor: mortality = 0.5%

Left liver donor: mortality = 0.1%

Living Liver Donors Mortality

Cause of death	Number
Sepsis	5
Liver failure	2
Unknown	3
Myocardial infarction	1
Cerebral hemorrhage	1
Pulmonary embolus	1
Peptic ulcer complication	1
Total	14

Trotter et al, Liver Transplantation 2006

Donor Complications By Graft Type

ELTR 6/2003: Adam et al

	Right liver	Left liver	Left lobe	*P*
No major complication	385 (79%)	88 (92%)	357 (89.5%)	
Complications	103 (21%)	8 (8%)	42 (10.5%)	*0.0001*
Biliary leak	28 (6%)	5 (5%)	6 (1.5%)	*0.005*
Biliary stenosis	11 (2%)	0 (0%)	0 (0%)	*0.004*
Liver insufficiency	12 (2.4%)	1 (0%)	2 (0.5%)	*ns*
PT<30%	12 *(3%)*	1 *(3%)*	2 *(2%)*	
[30%-50%]	181 *(48%)*	6 *(20%)*	8 *(9%)*	*0.0001*
PT>=50%	188 *(49%)*	23 *(77%)*	79 *(88%)*	
PE	4 (0.8%)	0 (0%)	5 (1%)	*ns*
Vascular	8 (1.6%)	0 (0%)	6 (1.5%)	*ns*
Infection	19 (4%)	2 (2%)	16 (4%)	*ns*
GI	3 (0.6%)	0 (0%)	3 (1%)	*ns*
General*	18 (3.6%)	0 (0%)	4 (1%)	*0.03*

Overall complication rate = 15%

Living Liver Donors
Morbidity and Mortality
Japanese Liver Transplantation Society

	n	Mortality	Morbidity (%)
Graft type			
Monosegment (segment 3)	8	0	0 (0)
Lateral segment	753	0	62 (8·2)*
Posterior segment	13	0	2 (15·4)
Left lobe	484	0	58 (12·0)†
Left lobe and caudate lobe	140	0	22 (15·7)
Right lobe	443	0	84 (19·0)
Total	1841	0	228 (12·4)

*p=0·038 compared with left lobe; p=0·011 compared with left lobe and caudate lobe; and p<0·0001 compared with right lobe. †p=0·0035 compared with right lobe.

Umeshita et al, Lancet 2003

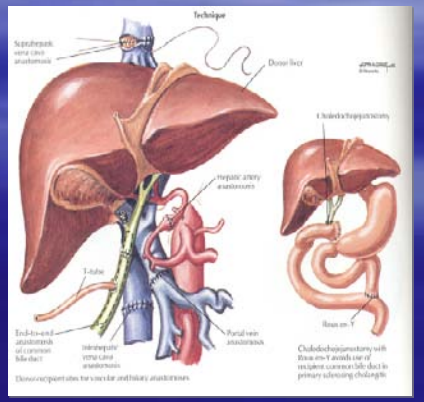
Living Liver Donors
Surgical Complications: Asian Collective

	LL (n=598)	L (n=327)	R (n=554)
Bile leakage	33	8	34
Biliary stricture	1	0	6
Hyperbilirubinaemia	2	0	41
PV thrombosis	0	0	3
Small bowel obstruction	5	1	4
Pulmonary embolism	0	1	3
Intraabdominal bleeding	0	0	3
Intraabdominal collection	0	0	20
Pancreatitis	1	0	2
Bleeding duodenal ulcer	1	0	2
Wound infection	9	10	26
Gastric outlet obstruction	4	3	1
Pneumonia	0	1	2
Pleural effusion	0	0	6
Pressure sore	0	0	1
Peroneal nerve palsy	0	0	1
Total	*56 (9.4%)*	*24 (7.3%)*	*155 (28%)*

CM Lo et al, Transplantation 2003

Current Update in Transplantation

- Trends in immunosuppression
- LDLT: right versus left
- Surgical Advances in Kidney Transplantation



It All Started in 1995

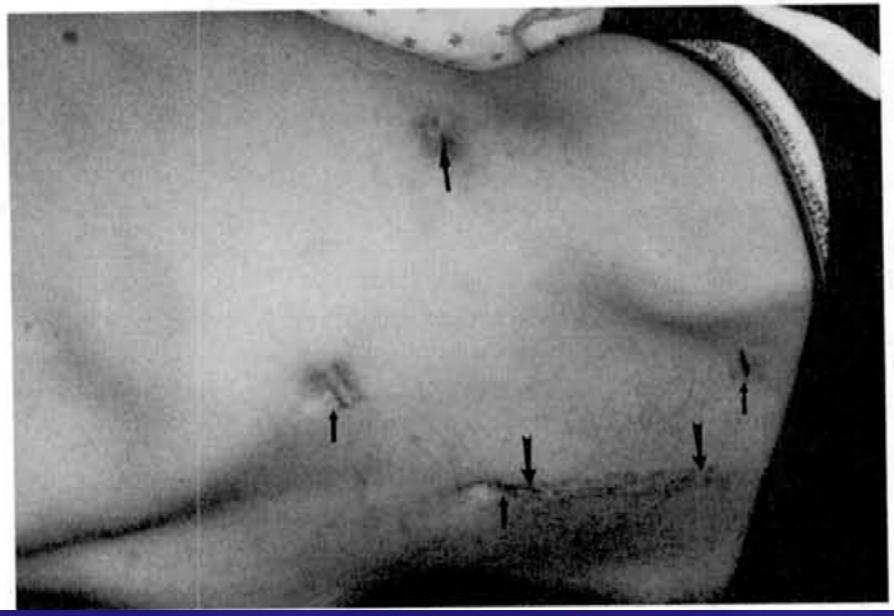
LAPAROSCOPIC LIVE DONOR NEPHRECTOMY

LLOYD E. RATNER,[1,2] LARS J. CISECK,[3] ROBERT G. MOORE,[3] FRANCISCO G. CIGARROA,[1] HOWARD S. KAUFMAN,[1] AND LOUIS R. KAVOUSSI[3]

Departments of Surgery and Urology, Johns Hopkins University School of Medicine and Johns Hopkins Bayview Medical Center, Baltimore, Maryland

A laparoscopic live-donor nephrectomy was performed on a 40-year-old man. The kidney was removed intact via a 9-cm infraumbilical midline incision. Warm ischemia was limited to less than 5 min. Immediately upon revascularization, the allograft produced urine. By the second postoperative day, the recipient's serum creatinine had decreased to 0.7 mg/dl. The donor's postoperative course was uneventful. He experienced minimal discomfort and was discharged home on the first postoperative day.

We conclude that laparoscopic donor nephrectomy is feasible. It can be performed without apparent deleterious effects to either the donor or the recipient. The limited discomfort and rapid convalescence enjoyed by our patient indicate that this technique may prove to be advantageous.

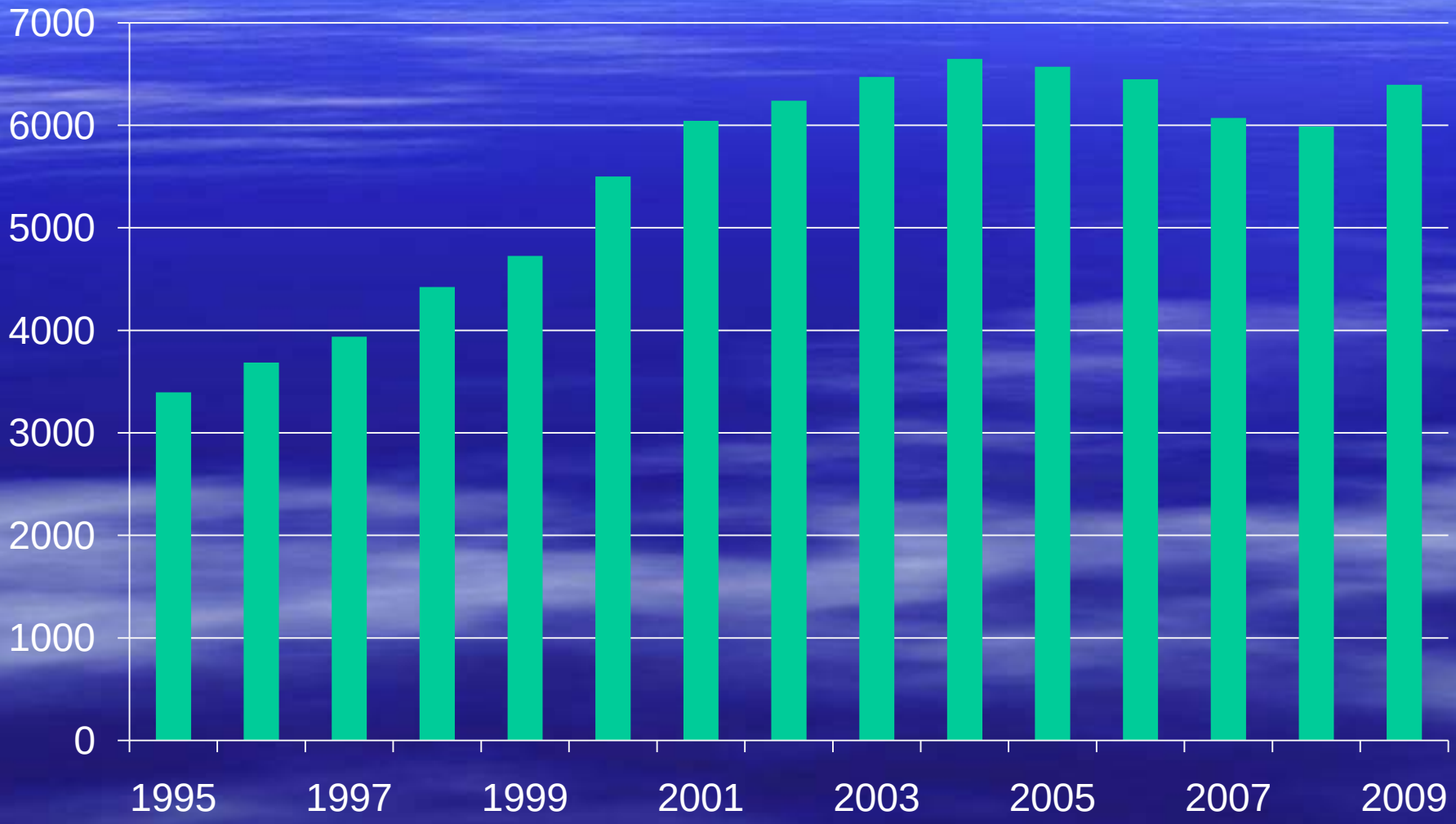


Response to Lap Nephrectomy

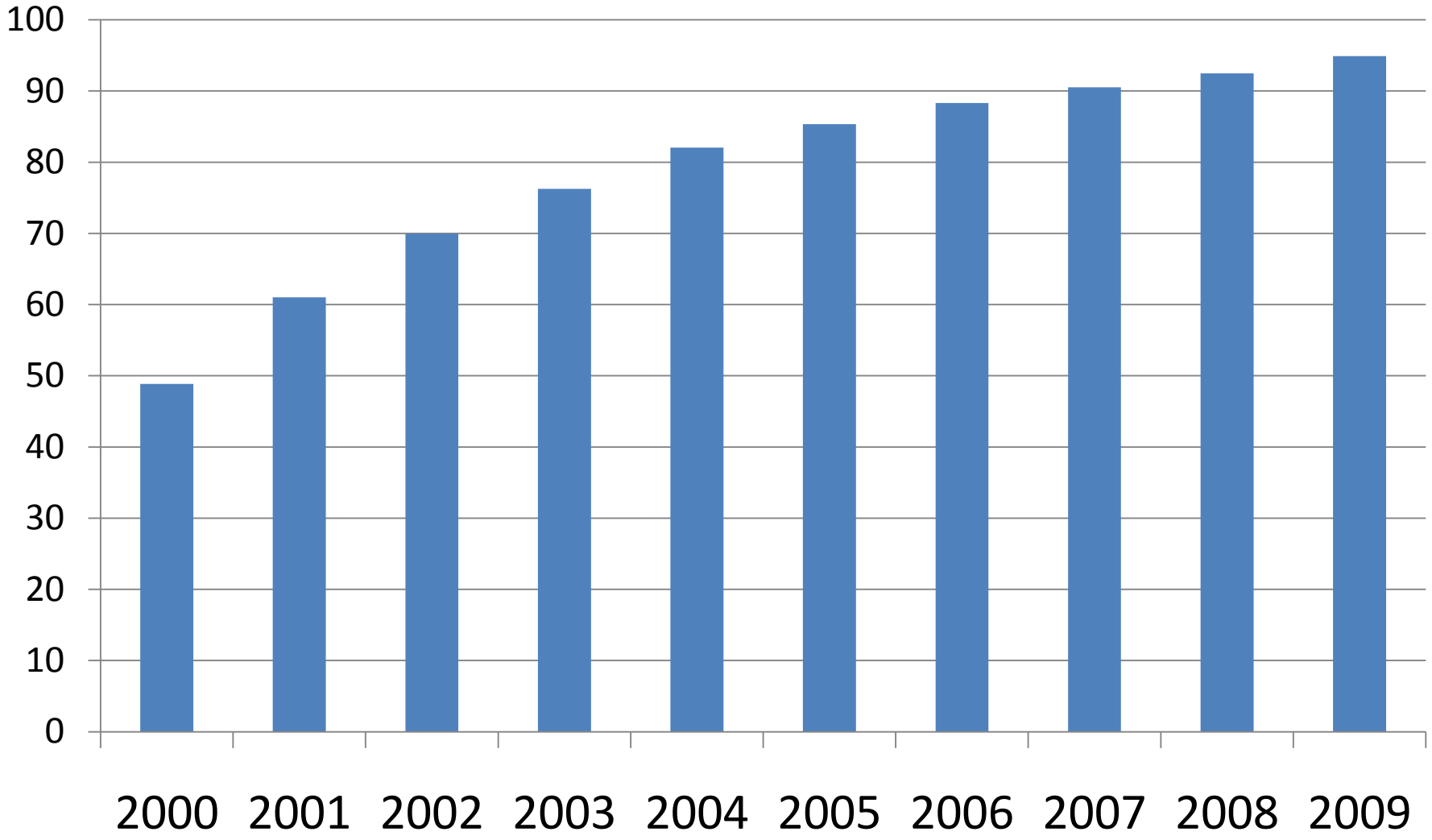
- From editor at *Transplantation*:

  "This is a bad thing for transplantation. A safe donor operation has been around for 40 years. Why would anyone want to change it?"

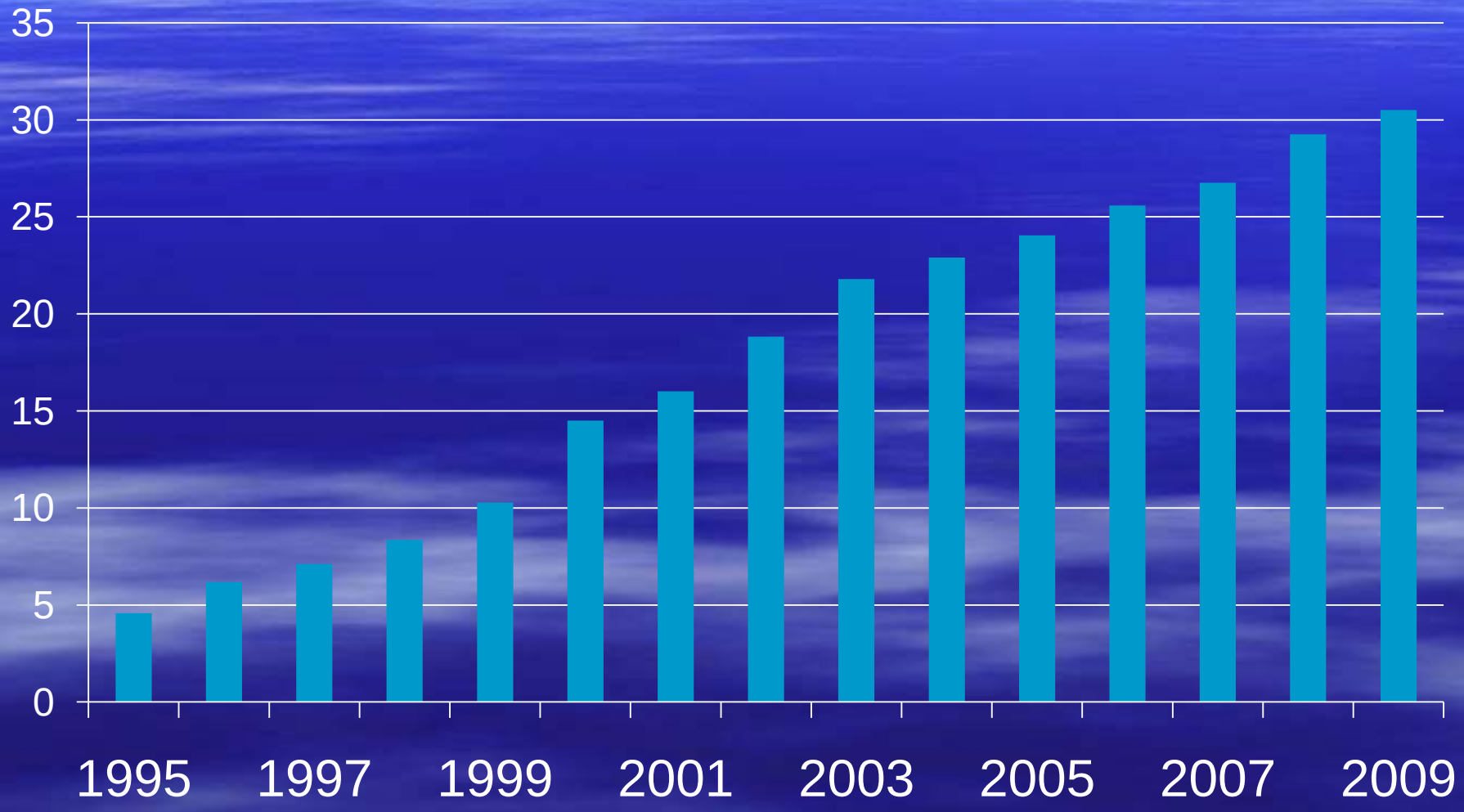
Live Donor Transplantation in US: Number of Donors Per Year



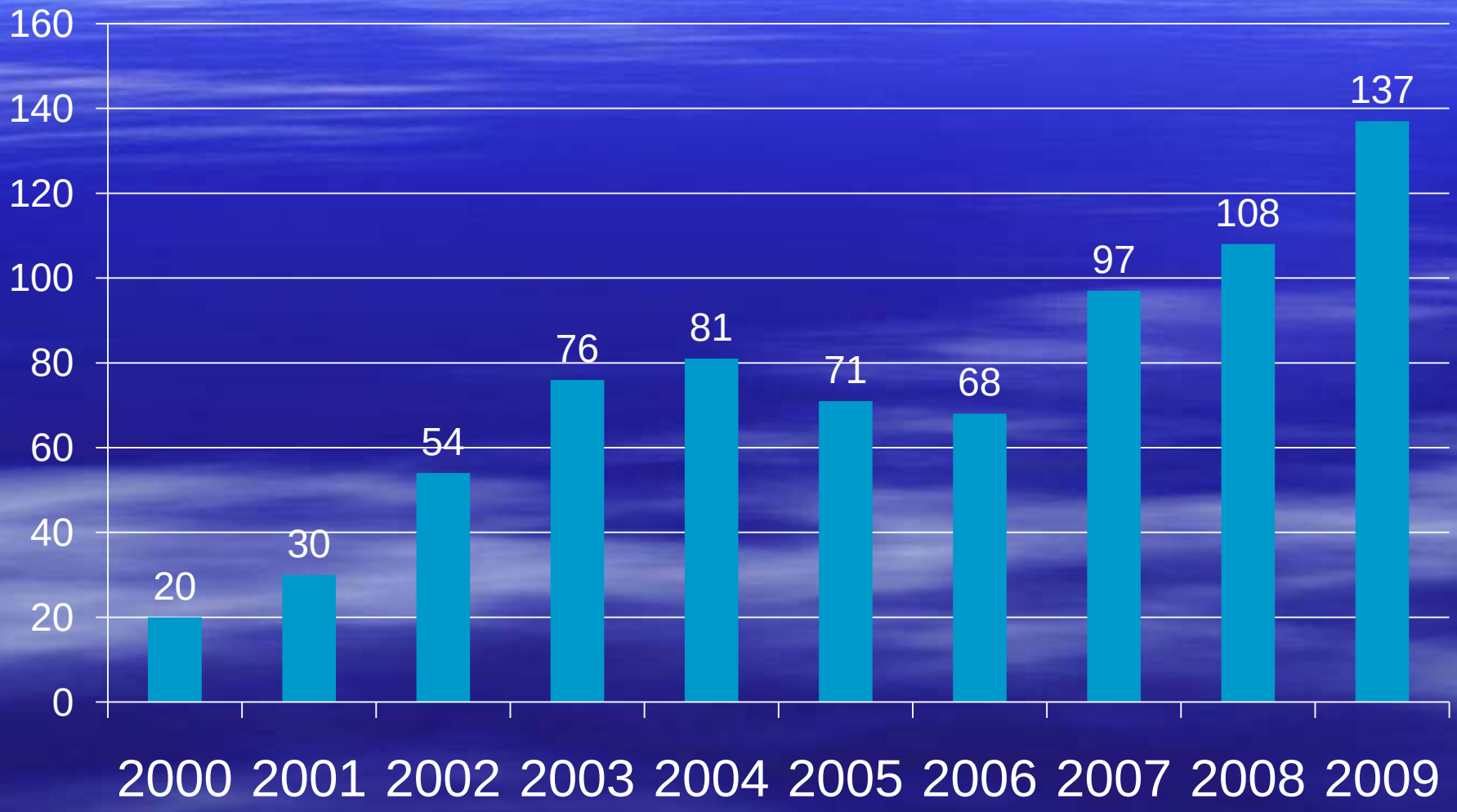
Live Donor Transplantation in US: Percent Performed Laparoscopically



Live Donor Transplantation in US: Unrelated Donors, Trends



Live Donor Transplantation in US: Anonymous Donation, Trends



A New Approach in 1998

HAND-ASSISTED LAPAROSCOPIC LIVE DONOR NEPHRECTOMY

J. STUART WOLF, JR, MARIE-BLANCHE TCHETGEN, AND ROBERT M. MERION

ABSTRACT

Minimally invasive live donor nephrectomy has been described using both standard laparoscopic dissection and "gasless" endoscopically assisted techniques. We report another method, hand-assisted laparoscopic live donor nephrectomy, which uses an occlusive sleeve to maintain pneumoperitoneum. The procedure is performed under excellent laparoscopic visualization in a generous operative field, and is facilitated substantially by manual assistance, which takes advantage throughout the procedure of the incision that is necessary for intact organ removal. The results of our first procedure are encouraging. UROLOGY **52:** 885–887, 1998.

A New Approach in 1998

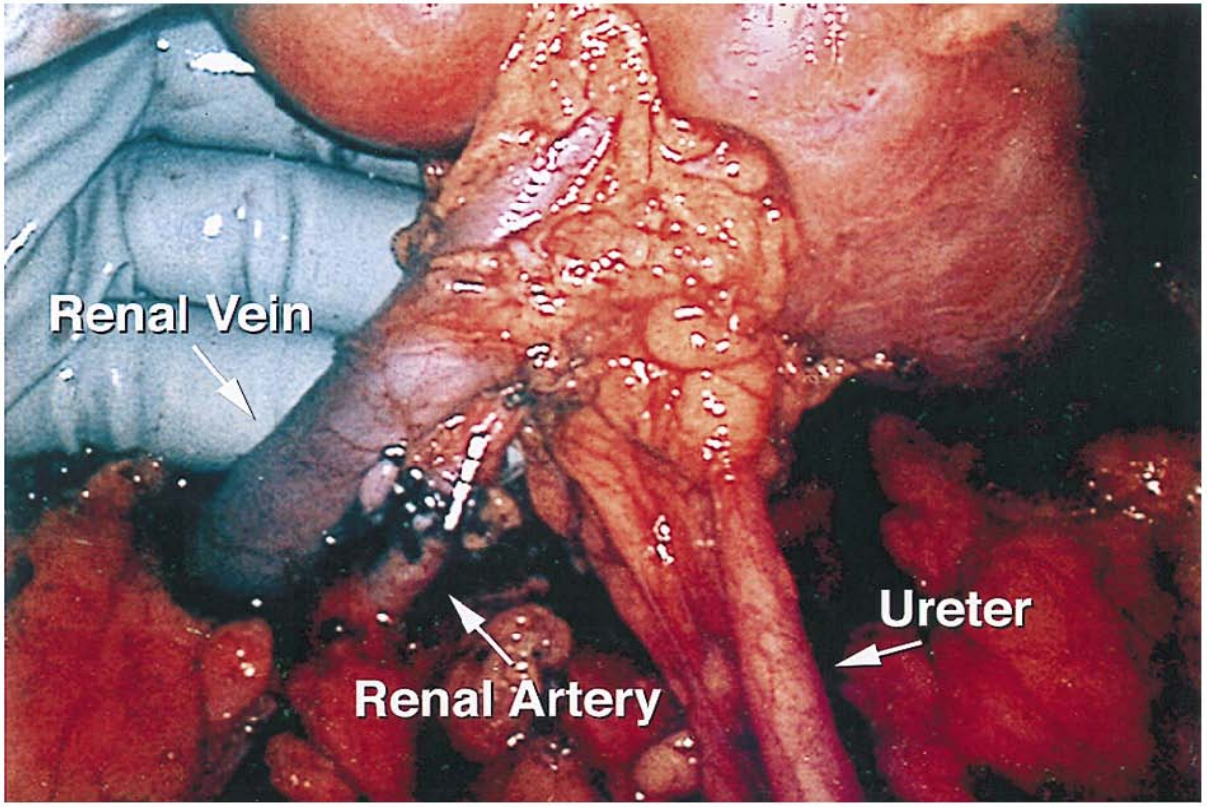
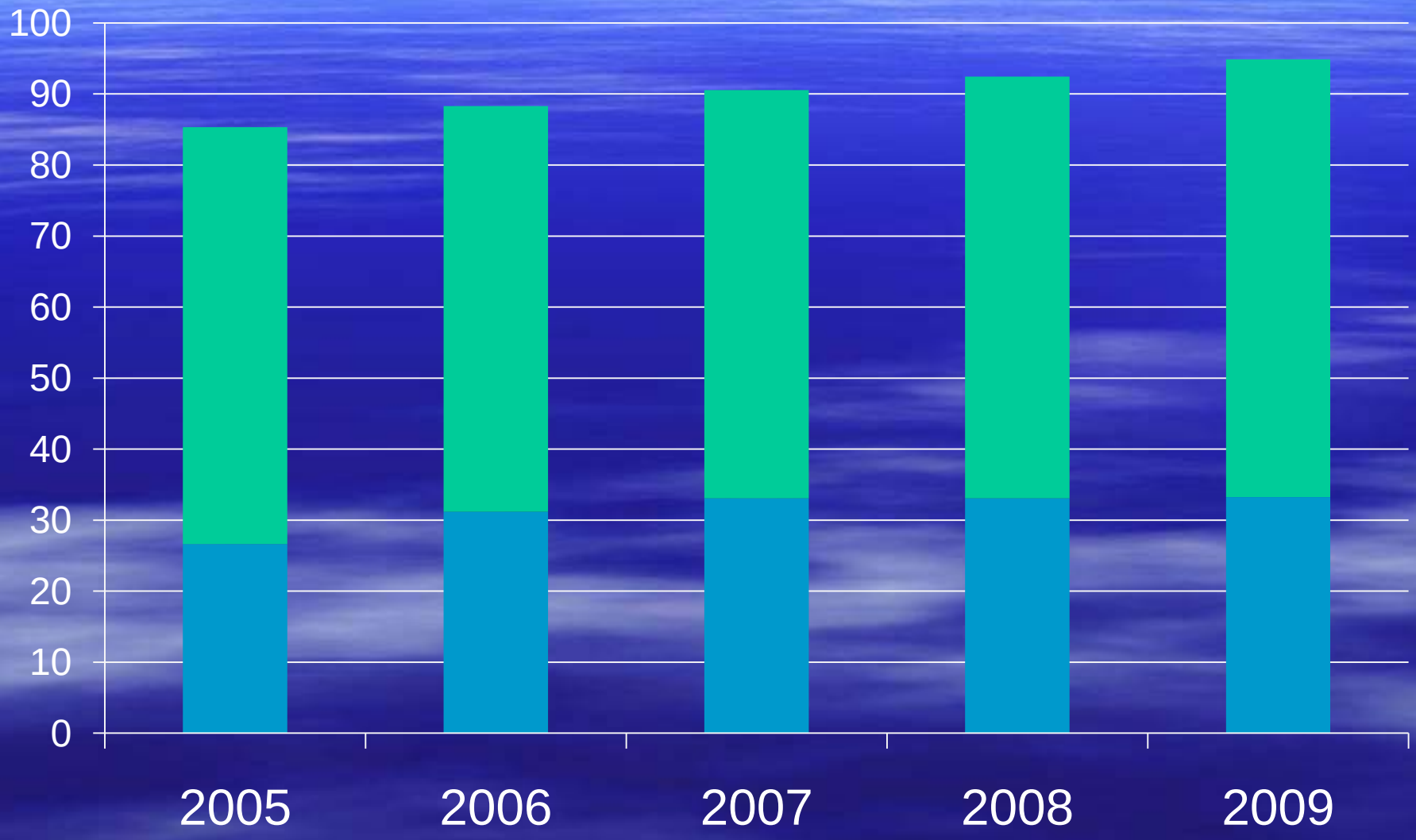


FIGURE 2. *Surgeon's left hand holding kidney just before incision of the ureter and renal hilum. Note the adequate length of the renal artery and vein, and the generous tissue maintained between the proximal ureter and kidney.*

A New Approach in 1998

- Hand Assisted Nephrectomy:
  - ~9cm hand port replaces Pfannensteil
  - Various locations (lower midline, upper midline, transverse, etc)
- Advantages?
  - Learning curve is less steep – yes… but only for non-laparoscopic surgeons
  - Faster? Less injury to kidney? – not necessarily!

Live Donor Transplantation in US: Laparoscopic versus Hand-Assisted



Ten Years Later

Single Port Transumbilical (E-NOTES) Donor Nephrectomy

Inderbir S. Gill,* David Canes, Monish Aron, Georges-Pascal Haber, David A. Goldfarb, Stuart Flechner, Mahesh R. Desai, Jihad H. Kaouk and Mihir M. Desai

From the Center for Laparoscopic and Robotic Surgery, Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio

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THE JOURNAL OF UROLOGY®

Vol. 180, 637-641, August 2008
Printed in U.S.A.
DOI:10.1016/j.juro.2008.04.028

Ten Years Later

- **Single-Port Nephrectomy**
  - Started in Urology for diseased kidneys
  - Very small periumbilical incision
  - Kidney removed piecemeal (minced)
- **Adopted for Donor Nephrectomy**
  - Minced kidney is harder to transplant
  - Requires much larger periumbilical incision

Ten Years Later

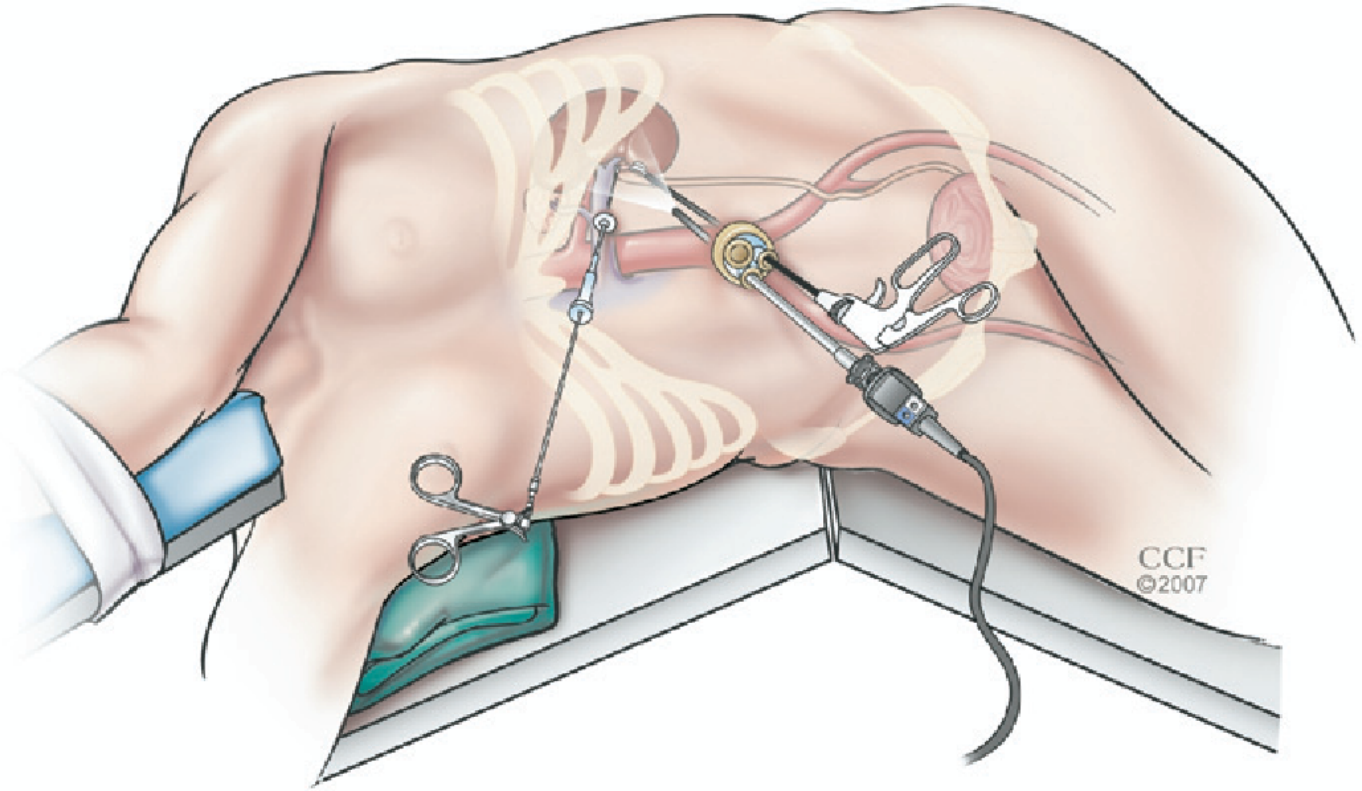
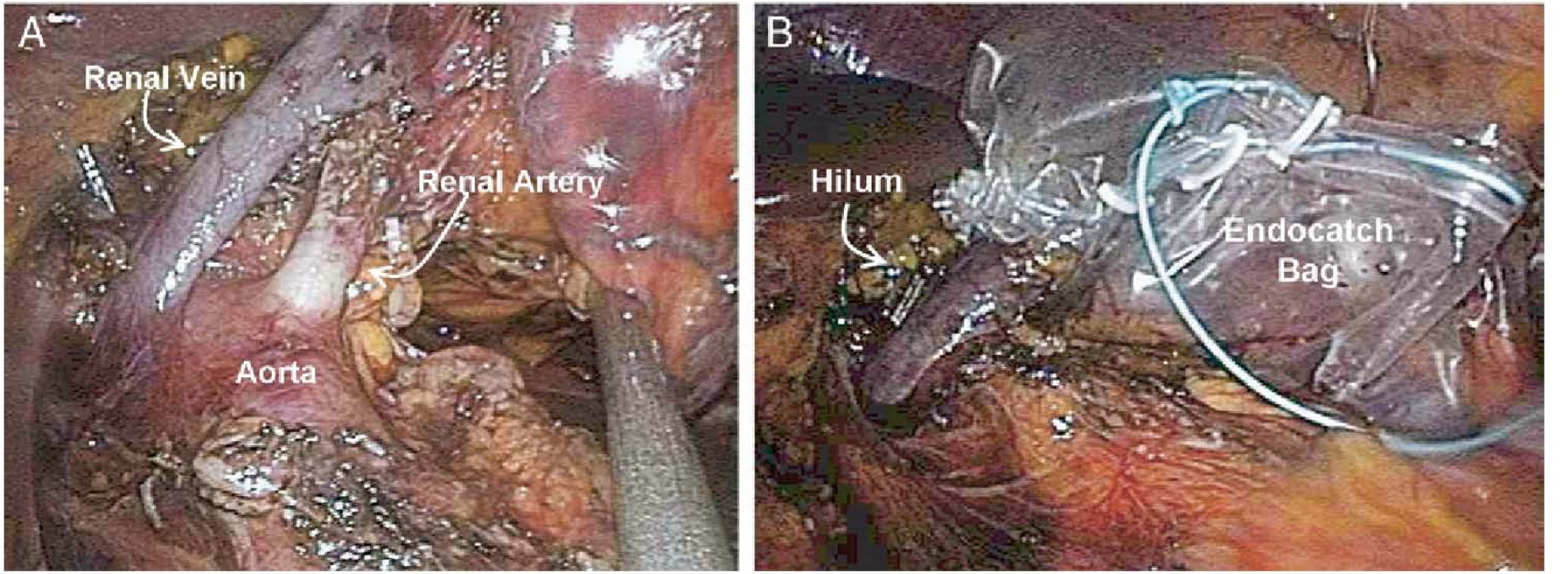


FIG. 2. Schematic diagram of single port tri-lumen device in umbilicus. 2 mm needlescopic port inserted in left subcostal area with needle puncture is used to selectively house 1.9 mm needlescopic grasper as needed.

Ten Years Later

Ten Years Later



Ten Years Later

Patient data				
	Pt No. 1	Pt No. 2	Pt No. 3	Pt No. 4
Age (yrs)	44	42	56	39
Sex	Female	Female	Female	Male
Body mass index	26.6	27.0	29.3	30.4
Donor kidney	Lt	Lt	Lt	Lt
Donor kidney vol on CT (cc)	130	Not available	Not available	261
No. renal arteries	1 (early bifurcation)	1	2	1
Operating room hrs	3	3.5	3	5
Blood loss (cc)	50	50	50	200
Warm ischemia time (mins)	4.5	8	4.7	7.6
Umbilical incision length (cm)	4	4	4	5
Vessel length (cm):				
Renal artery	3	3.5	4	2.4
Renal vein	4	4	4	3
Ureteral length (cm)	15	13	15	15
Morphine equivalents (mg)	7	0*	47.5	57
VAS score:				
At discharge home	2/10	0/10	4/10	0/10
At 2 wks	0/10	0/10	0/10	0/10
Recipient nadir serum creatinine (mg/dl)	0.9	1.4	1.8	1.5

* 30 mg × 5 doses = 150 mg ketorolac.

Ten Years Later

FIG. 5. Abdomen 2 weeks postoperatively

Ten Years Later

- Transumbilical nephrectomy:
  - "no incision" → in reality, you need an incision big enough to pull the kidney out
- Advantages?
  - Cosmesis
- Disadvantages?
  - **Much more difficult… riskier?**
  - Training fellows? (2-attending cases?)

Minimizing Minimally Invasive

American Journal of Transplantation 2010; 10: 1473–1477
Wiley Periodicals Inc.

doi: 10.1111/j.1600-6143.2010.03131.x

Case Report

Laparoscopic Live Donor Nephrectomy with Vaginal Extraction: Initial Report

M. E. Allaf[a], A. Singer[b], W. Shen[c], I. Green[c], K. Womer[d], D. L. Segev[b] and R. A. Montgomery*[,b]

[a]*James Buchanan Brady Urological Institute, Department of Urology,* [b]*Department of Surgery, Division of Transplant Surgery,* [c]*Department of Obstetrics and Gynecology and* [d]*Department of Medicine, Division of Nephrology, Johns Hopkins Medical Institutions, Baltimore, MD*
**Corresponding author: Robert A. Montgomery, rmonty@jhmi.edu*

The recent decrease in the total number of living kidney transplants coupled with the increase in the number of candidates on the waiting list underscores the importance of eliminating barriers to living kidney donation. We report what we believe to be the first pure right-sided laparoscopic live donor nephrectomy with extraction of the kidney through the vagina. The warm ischemia time was 3 min and the renal vessels and ureter of the procured kidney were of adequate length for routine transplantation. The donor did not receive any postoperative parenteral narcotic analgesia, was discharged home within 24 h and was back to normal activity in 14 days. The kidney functioned well with no complications or infections. Laparoscopic live donor nephrectomy with vaginal extraction may be a viable alternative to open and standard laparoscopic approaches. Potential advantages include reduced postoperative pain, shorter hospital stay and convalescence and a more desirable cosmetic result. These possible, but yet unproven, advantages may encourage more individuals to consider live donation.

Live Kidney Donor Study

JAMA®

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Perioperative Mortality and Long-term Survival Following Live Kidney Donation

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Context More than 6000 healthy US individuals every year undergo nephrectomy for the purposes of live donation; however, safety remains in question because longitudinal outcome studies have occurred at single centers with limited generalizability.

Objectives To study national trends in live kidney donor selection and outcome, to estimate short-term operative risk in various strata of live donors, and to compare long-term death rates with a matched cohort of nondonors who are as similar to the donor cohort as possible and as free as possible from contraindications to live donation.

Design, Setting, and Participants Live donors were drawn from a mandated national registry of 80 347 live kidney donors in the United States between April 1, 1994, and March 31, 2009. Median (interquartile range) follow-up was 6.3 (3.2-9.8) years. A matched cohort was drawn from 9364 participants of the third National Health and Nutrition Examination Survey (NHANES III) after excluding those with contraindications to kidney donation.

Main Outcome Measures Surgical mortality and long-term survival.

Results There were 25 deaths within 90 days of live kidney donation during the study period. Surgical mortality from live kidney donation was 3.1 per 10 000 donors (95% confidence interval [CI], 2.0-4.6) and did not change during the last 15 years despite differences in practice and selection. Surgical mortality was higher in men than in women (5.1 vs 1.7 per 10 000 donors; risk ratio [RR], 3.0; 95% CI, 1.3-6.9; $P = .007$), in black vs white and Hispanic individuals (7.6 vs 2.6 and 2.0 per 10 000 donors; RR, 3.1; 95% CI, 1.3-7.1; $P = .01$), and in donors with hypertension vs without hypertension (36.7 vs 1.3 per 10 000 donors; RR, 27.4; 95% CI, 5.0-149.5; $P < .001$). However, long-term risk of death was no higher for live donors than for age- and comorbidity-matched NHANES III participants for all patients and also stratified by age, sex, and race.

Conclusion Among a cohort of live kidney donors compared with a healthy matched cohort, the mortality rate was not significantly increased after a median of 6.3 years.

Live Kidney Donor Study

- National study
- 80,347 donors over 15 years
- All centers in the US

Donor Mortality Over Time

- 1994-1997: 1.5 per 10,000 (0.2-5.4)
  - Laparoscopic donor operation developed 1995
- 1998-2001: 3.9 per 10,000 (1.7-7.6)
  - National dissemination of laparoscopic operation
- 2002-2005: 4.2 per 10,000 (2.1-7.6)
  - Deaths reported from arterial clips dislodging
- 2006-2009: 2.0 per 10,000 (0.5-5.0)
- What will happen with new techniques?

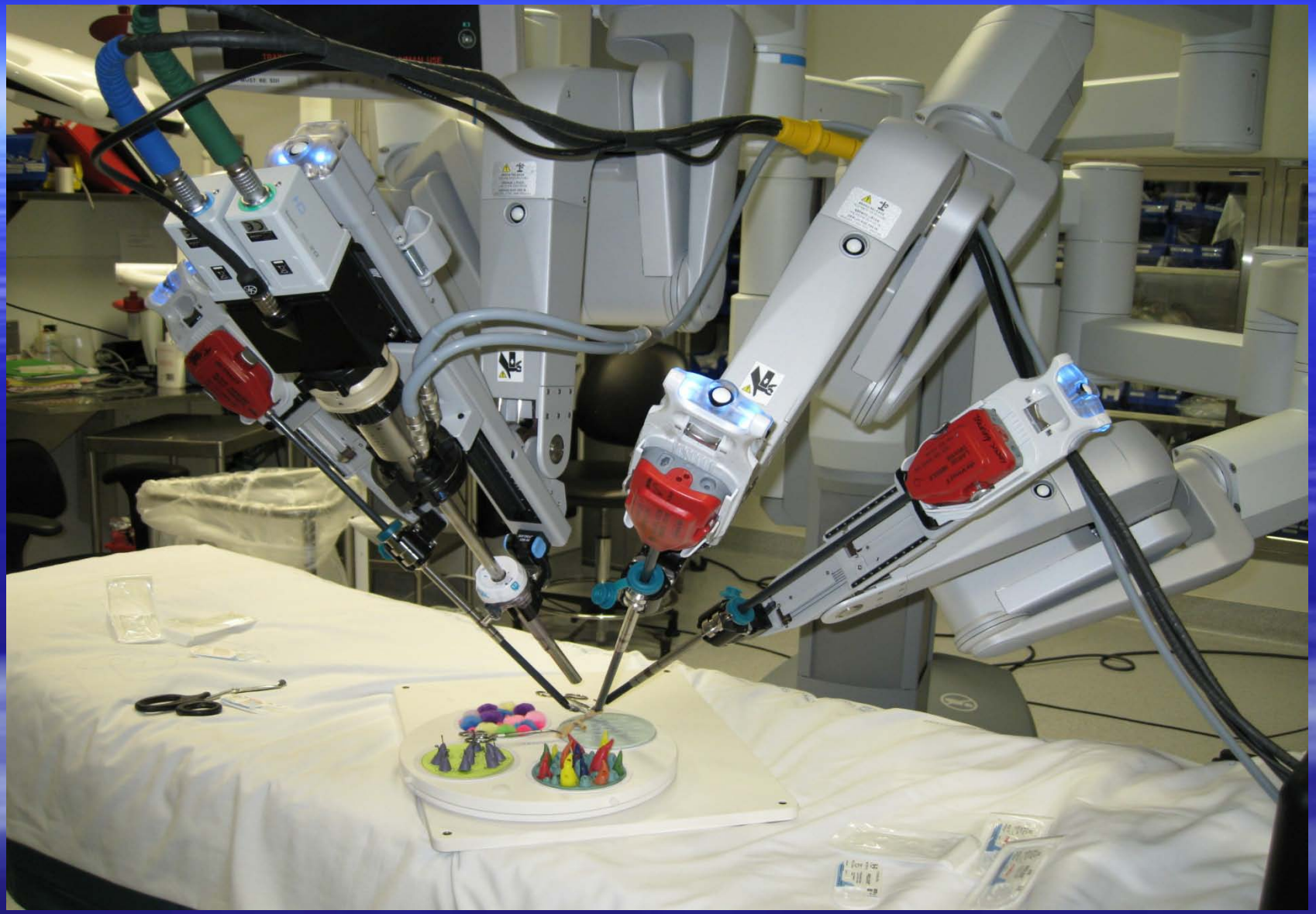
Minimally Invasive *Recipients*?

- Robot-assisted retroperitoneal kidney transplant (Geffner, St. Barnabas)
- Robotic transabdominal kidney transplant (Benedetti, UIC)
- Pure laparoscopic kidney transplant (Modi, Ahmedabad, India)

Dry Lab

- Suturing and Knot Tying Drills
- Anastomoses with Vascular Graft
- Sessions at robotic lab or hospital OR when daVinci not in use

Courtesy of Stuart Geffner, Saint Barnabas Hospital

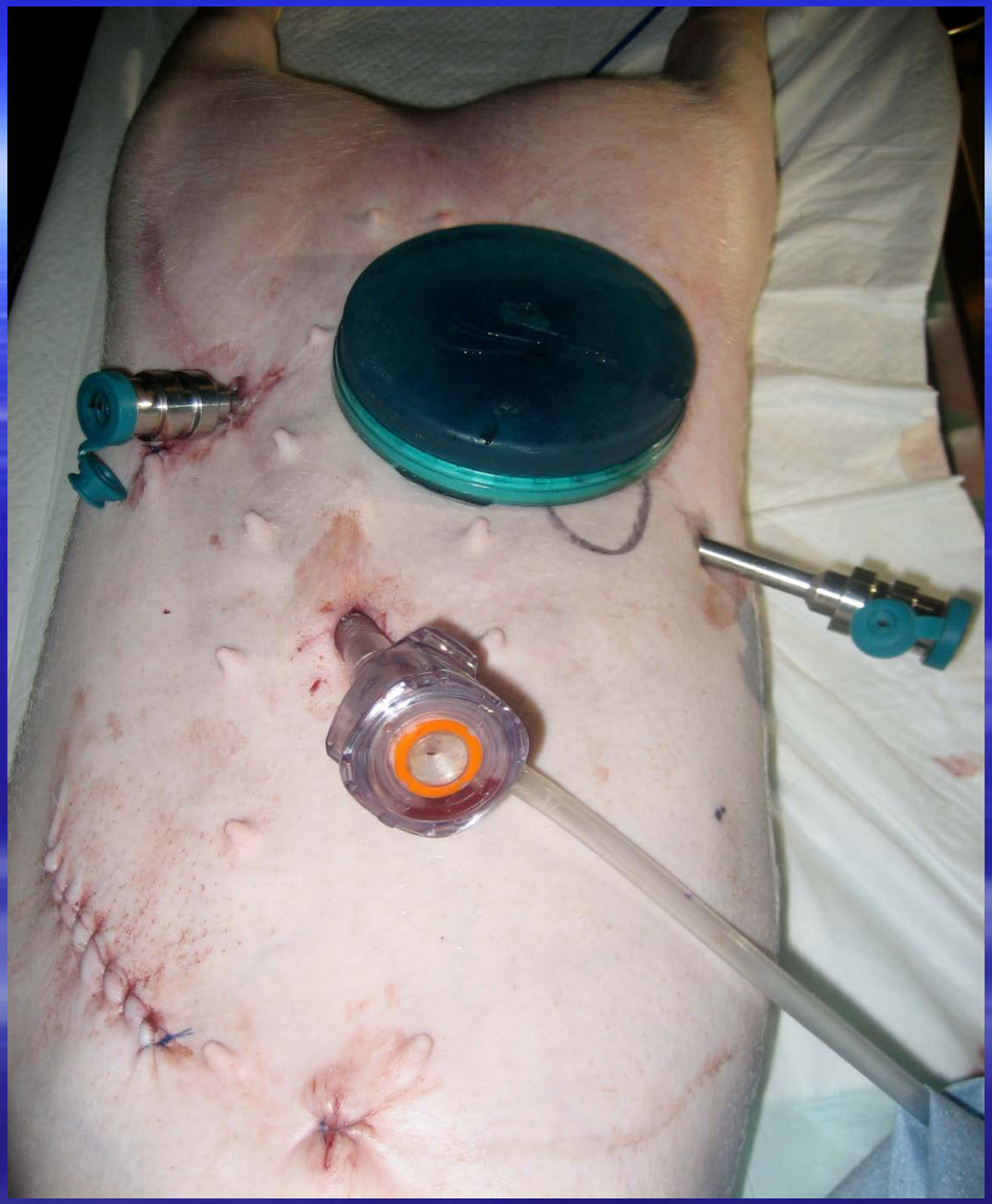


Courtesy of Stuart Geffner, Saint Barnabas Hospital

Animal Lab

- Porcine Model
- Left Donor Nephrectomy followed by re-implantation into the animal
- Transplantation of discarded kidneys from OPO into the animal

Courtesy of Stuart Geffner, Saint Barnabas Hospital



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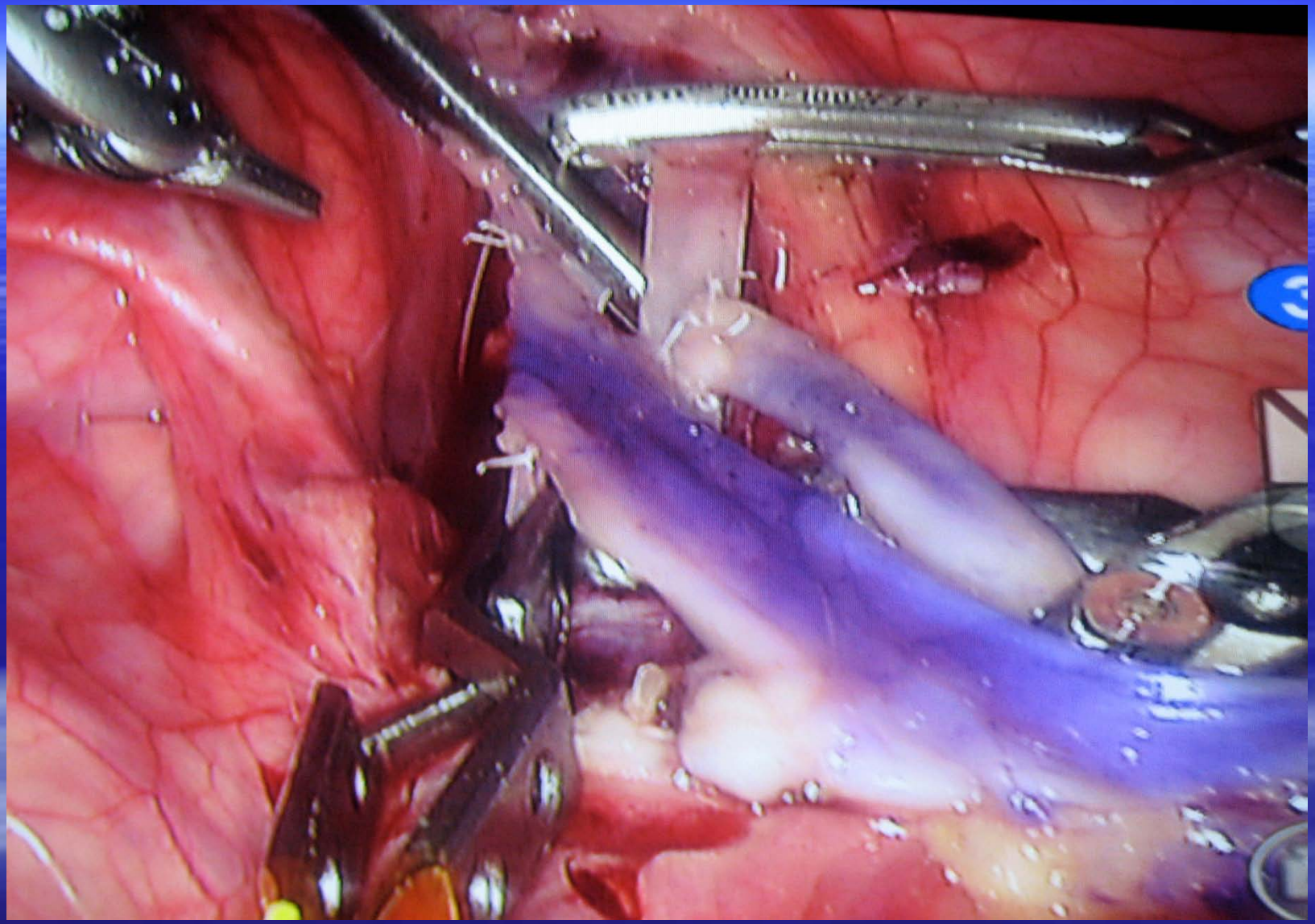


Courtesy of Stuart Geffner, Saint Barnabas Hospital

Robotic Assistance During Open Transplant Procedures

- da Vinci S used to suture portions of anastomoses during open procedure
- Gradual Progression
- IRB Approval

Courtesy of Stuart Geffner, Saint Barnabas Hospital

The Current Procedure

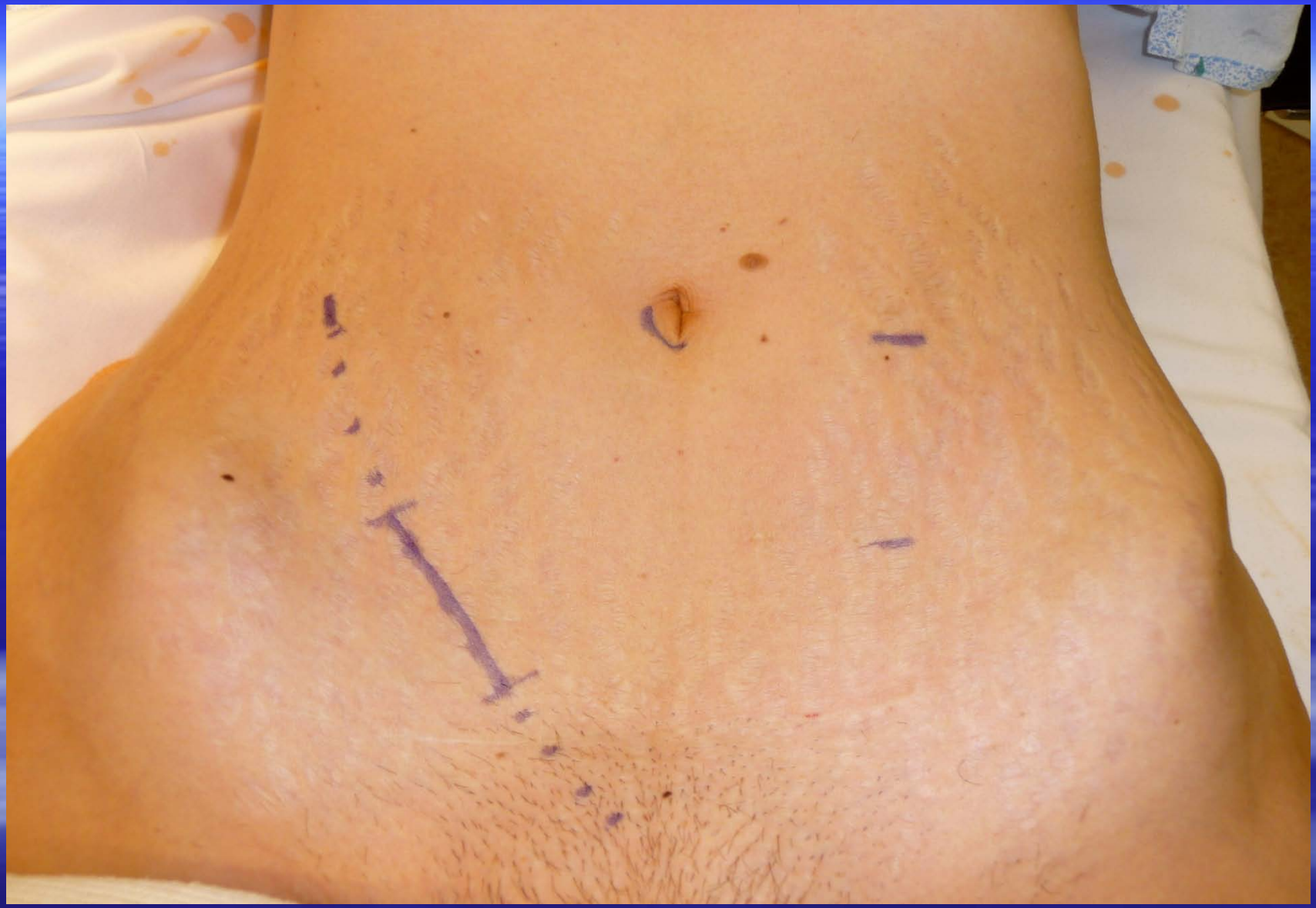
- Dissection of Retroperitoneal Space and Iliac Vessels - Port Placement
- Introduction of the Kidney into the space
- Vascular control and anastomoses
- Reperfusion
- Ureteral Anastomosis

Courtesy of Stuart Geffner, Saint Barnabas Hospital

Dissection of RP space

- Use of “hernia” balloon
- Use of hand port
- Port placement - 4
  - Camera - peri-umbilical
  - Operative Ports x 2 - LLQ and RLQ
  - Assistant Port - LLQ

Courtesy of Stuart Geffner, Saint Barnabas Hospital



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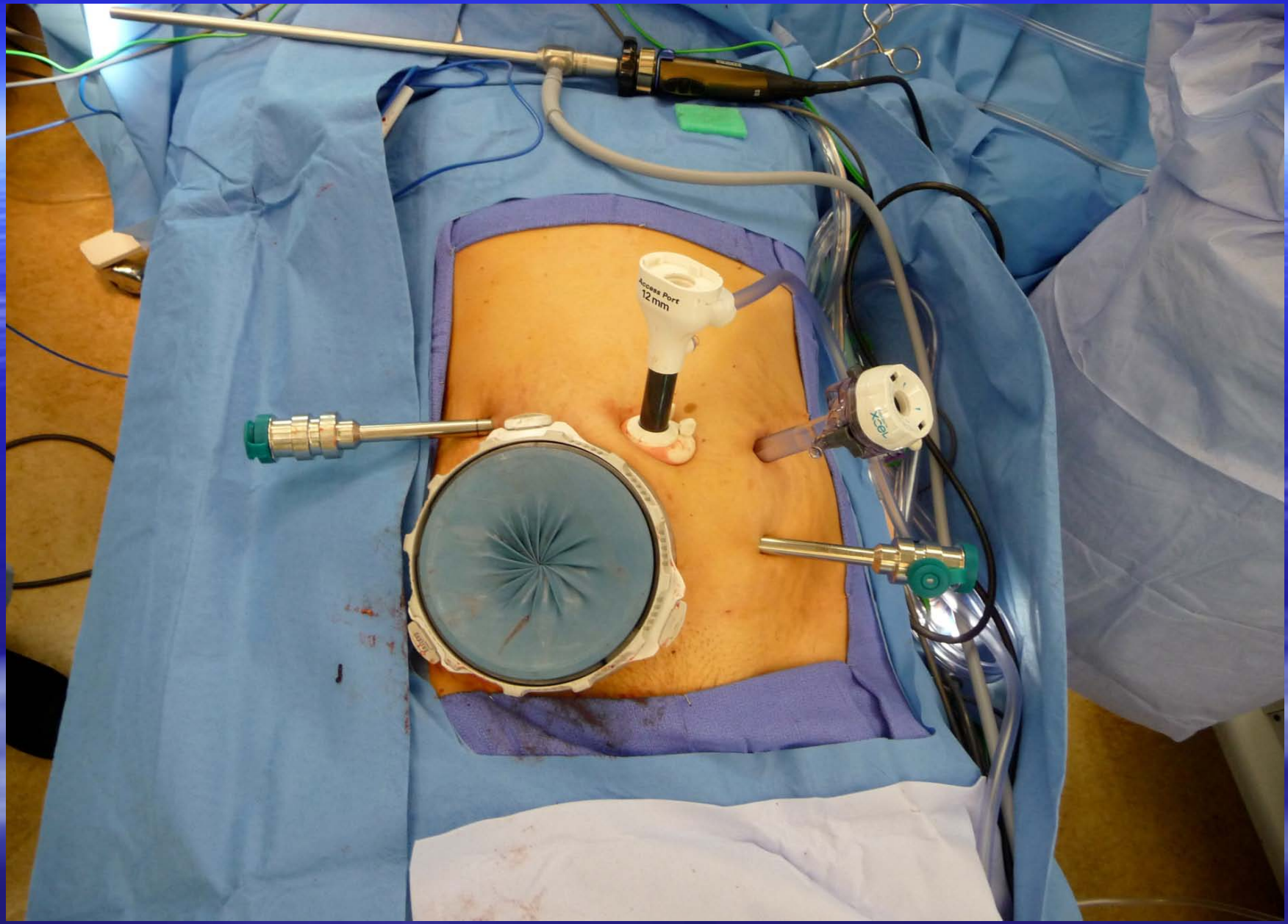


Courtesy of Stuart Geffner, Saint Barnabas Hospital

16 Successful Minimally Invasive (Closed) Cases

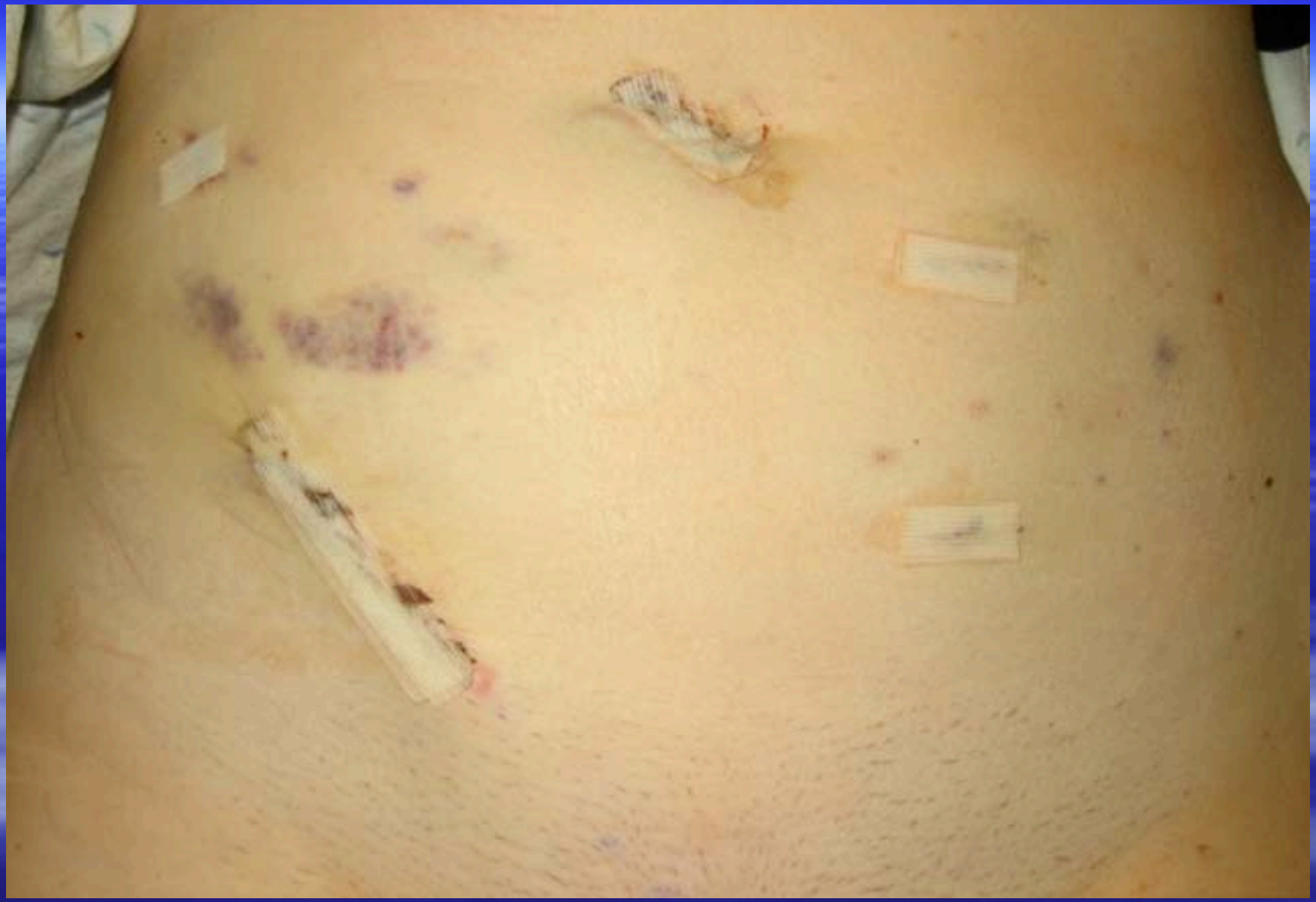
- 12/16/08 - present
- 11 females 5 males
- Age 26- 61 years old
- Average Anastomotic Time - 60 minutes
- 15 with immediate graft function, 1 DGF
- Discharge POD #3 (12 pts) POD #4 (2 pts)

Courtesy of Stuart Geffner, Saint Barnabas Hospital

Conversions – 4 Pts

- Donor kidney with two renal arteries
- Recipient with mild arteriosclerosis – unable to occlude iliac artery
- Recipient with marked subcut. emphysema and elevated CO2
- Recipient with severe fibrotic reaction surrounding iliac vessels

Courtesy of Stuart Geffner, Saint Barnabas Hospital



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Minimally Invasive *Recipients*?

- Motivation:
  - Very high risk of wound infection in obese patients undergoing kidney transplantation
  - Wound infections in these patients are also associated with allograft loss and death
  - Might minimally invasive approaches, with reduced incisions (in locations that are easier to heal), improve outcomes?

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Case Report

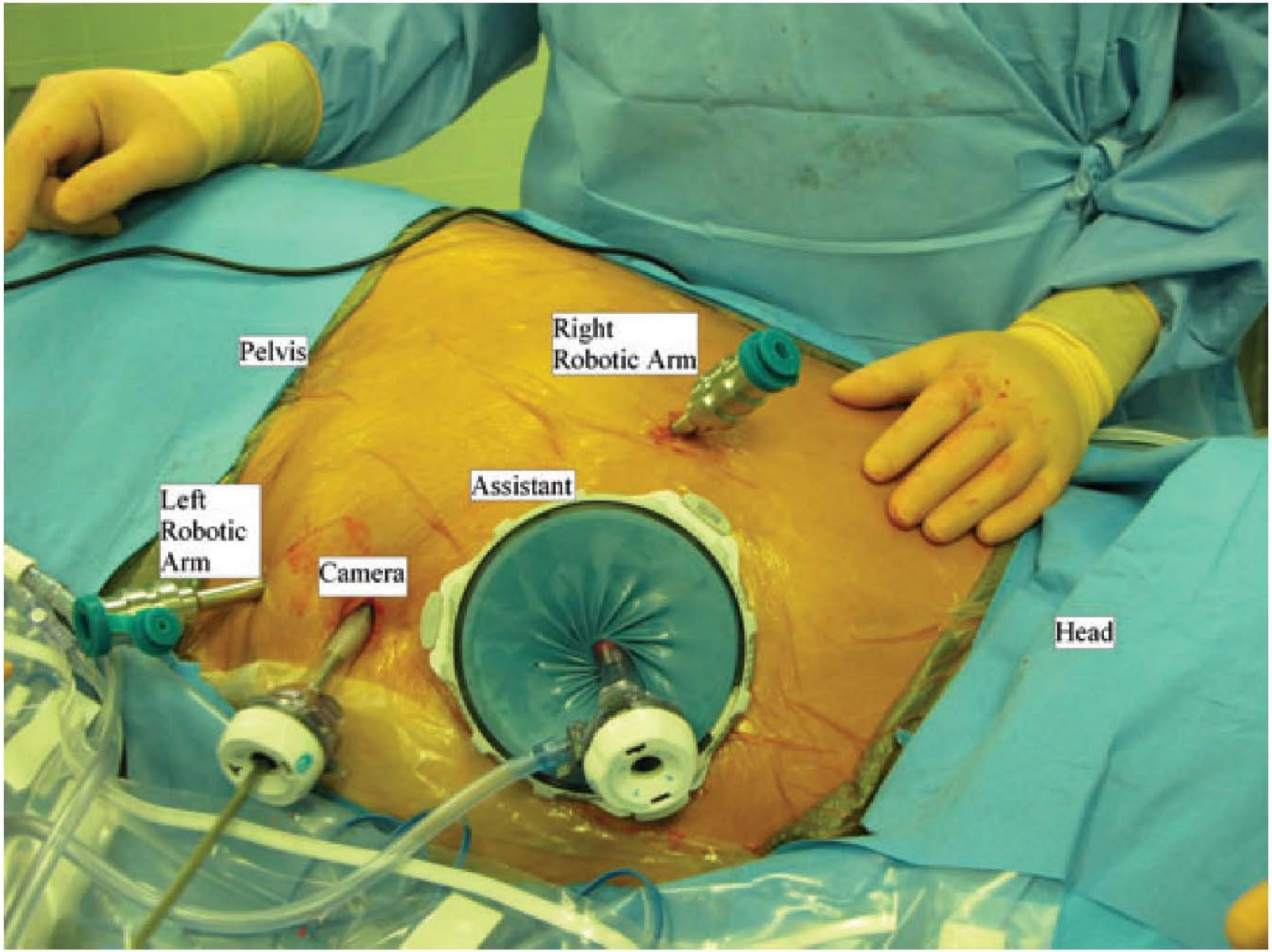
Robotic Transabdominal Kidney Transplantation in a Morbidly Obese Patient

P. Giulianotti, V. Gorodner, F. Sbrana, I. Tzvetanov, H. Jeon, F. Bianco, K. Kinzer, J. Oberholzer* and E. Benedetti

tend not to list morbidly obese patients for kidney transplantation.

Minimally invasive surgical techniques have revolutionized

Giulianotti/Benedetti et al, AJT, 2010



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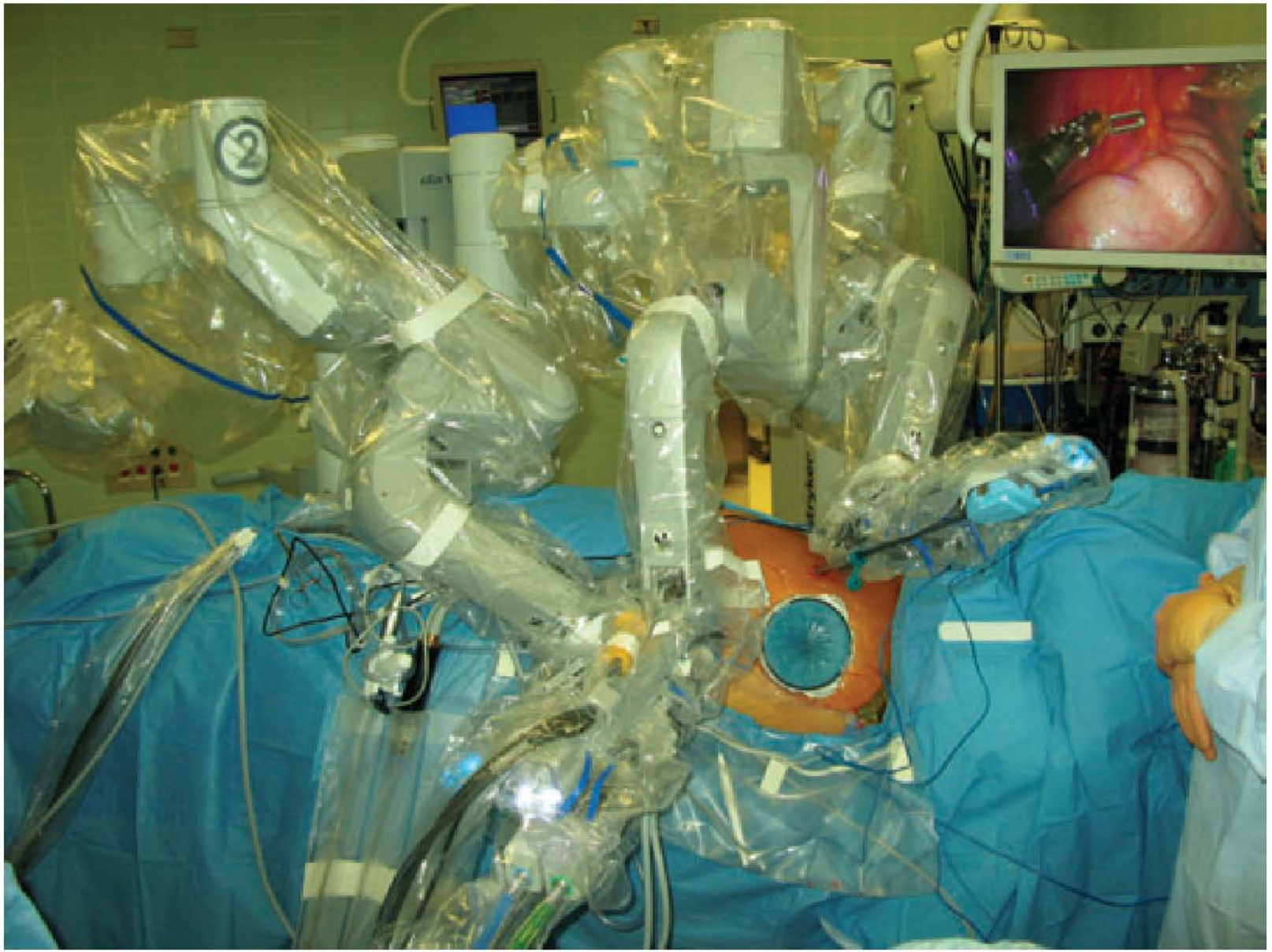

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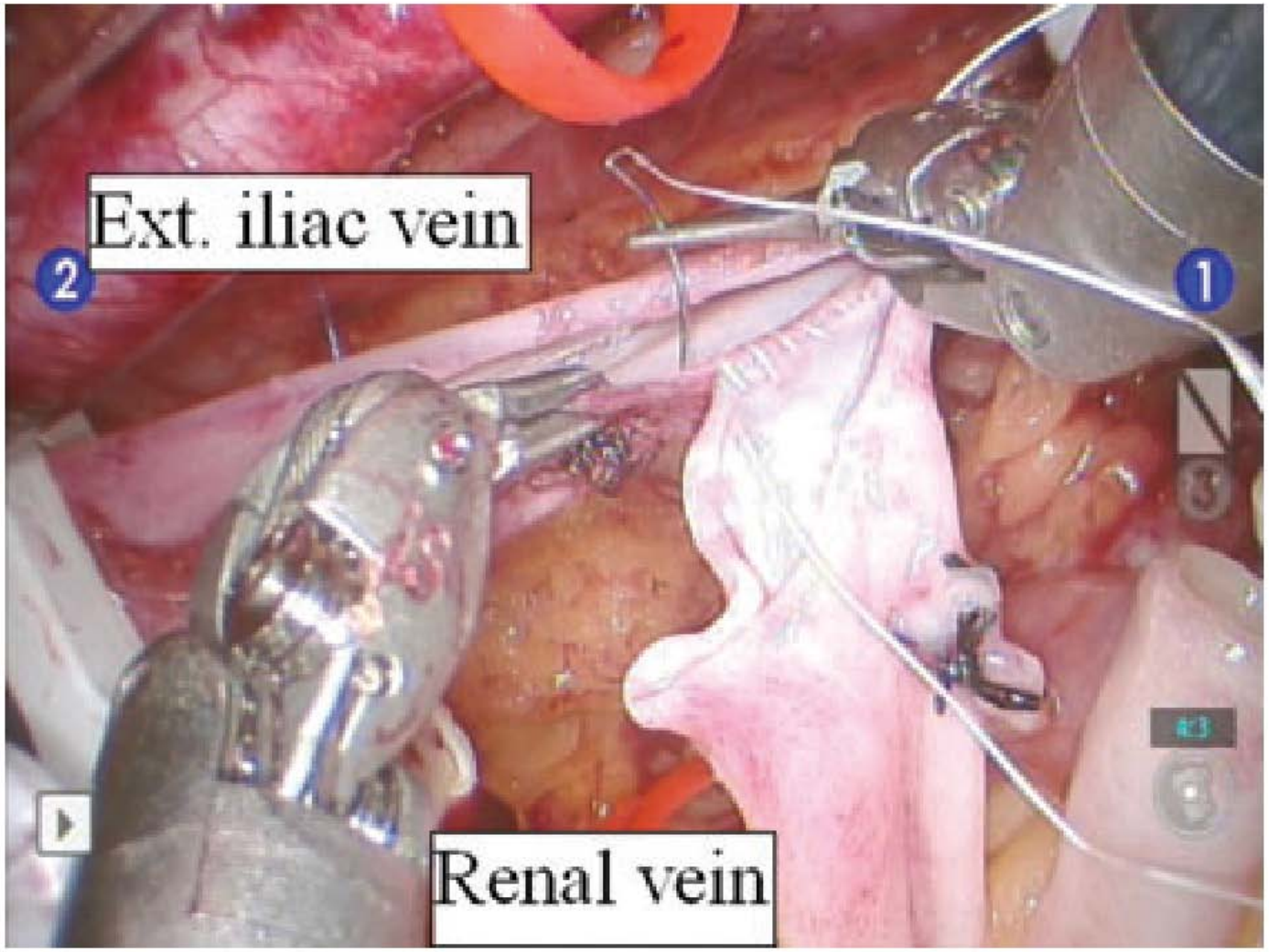

Figure 3: Vein anastomosis.

Giulianotti/Benedetti et al, AJT, 2010

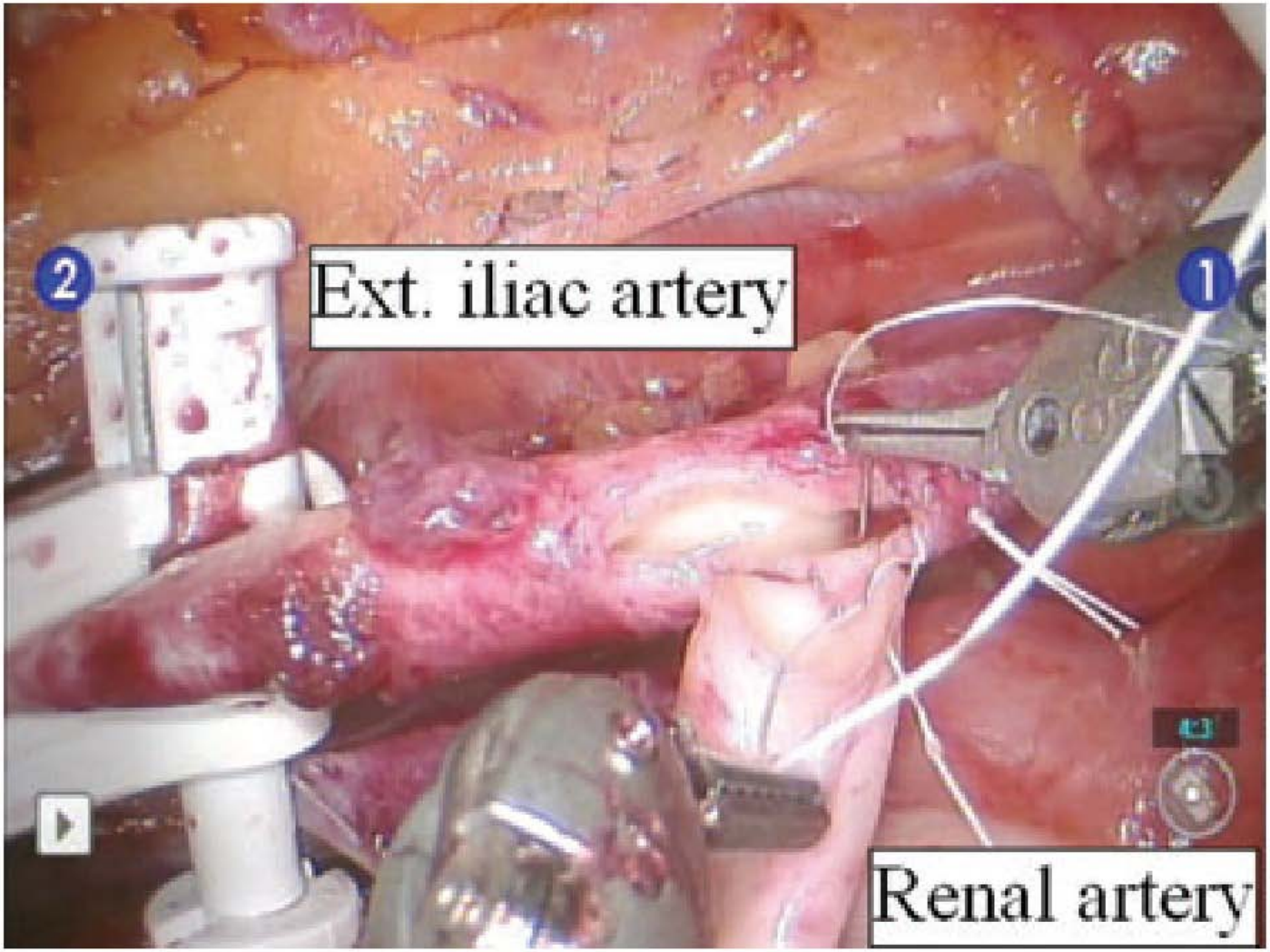

Figure 4: Arterial anastomosis.

Giulianotti/Benedetti et al, AJT, 2010

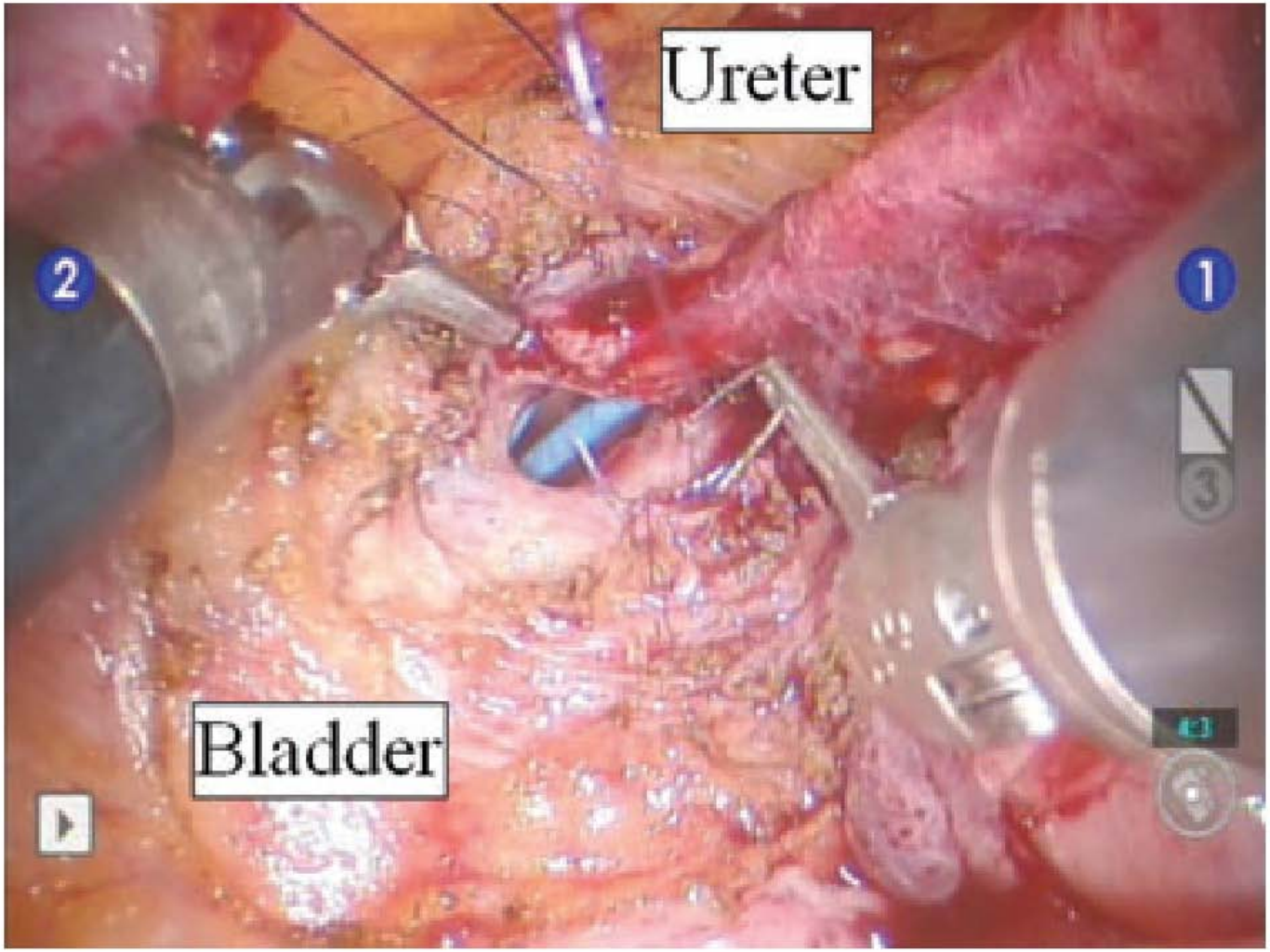

Figure 5: Ureteral anastomosis.

Giulianotti/Benedetti et al, AJT, 2010

Full Robotic Kidney Transplant in Obese Patients: UIC Series

No	1	2	3	4	5	6	7	8	9	10
Age	34	39	40	52	61	45	44	56	33	47
BMI	41	40	48	35	32	41	40	46	31	36
Diseased/ Living	D	L	L	L	L	L	L	L	L	L
Operating time, min	270	240	250	250	300	360	360	360	320	340
WIT, min	49	43	44	58	35	58	58	49	50	46
CIT, hrs	9.6	1.1	5.1	1.3	0.9	0.9	3.1	2.4	0.6	0.8
Blood loss, cc	50	50	50	200	50	50	200	100	100	50
Hospital stay, days	6	13	4	4	5	7	6	5	5	5

Courtesy of Enrico Benedetti, U Illinois at Chicag

Results

- All the kidney grafts are currently functioning with Cr <1.5 mg/dl
- No technical complications either in the short or long term
- In particular no surgical site infections

Courtesy of Enrico Benedetti, U Illinois at Chicago