

# **Liver Transplantation for PSC**

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# Liver Transplantation for PSC

- **History of Liver Transplantation**
- **Indications for Liver Transplantation**
- **The Demand for Liver Transplantation**
- **Surgical Procedure**
- **Complications**
- **Live Donor Liver Transplantation (LDLT)**
- **Questions**

# **Liver Transplantation for PSC**

## **Topics not covered**

- **Liver Allocation**
- **Waiting List**

# Disclosures

- **I have no financial conflicts to disclose**
- **UC-Davis no longer performs liver transplantation**

# **The History of Liver Transplantation**

**Dr. Tom Starzl  
Liver Transplant  
Pioneer**



# 1st One Year Survival after Liver Transplantation

- 1967 at University of Colorado
  - ◆ Super Bowl I
- 19 month old girl
- Dx: Hepatoma



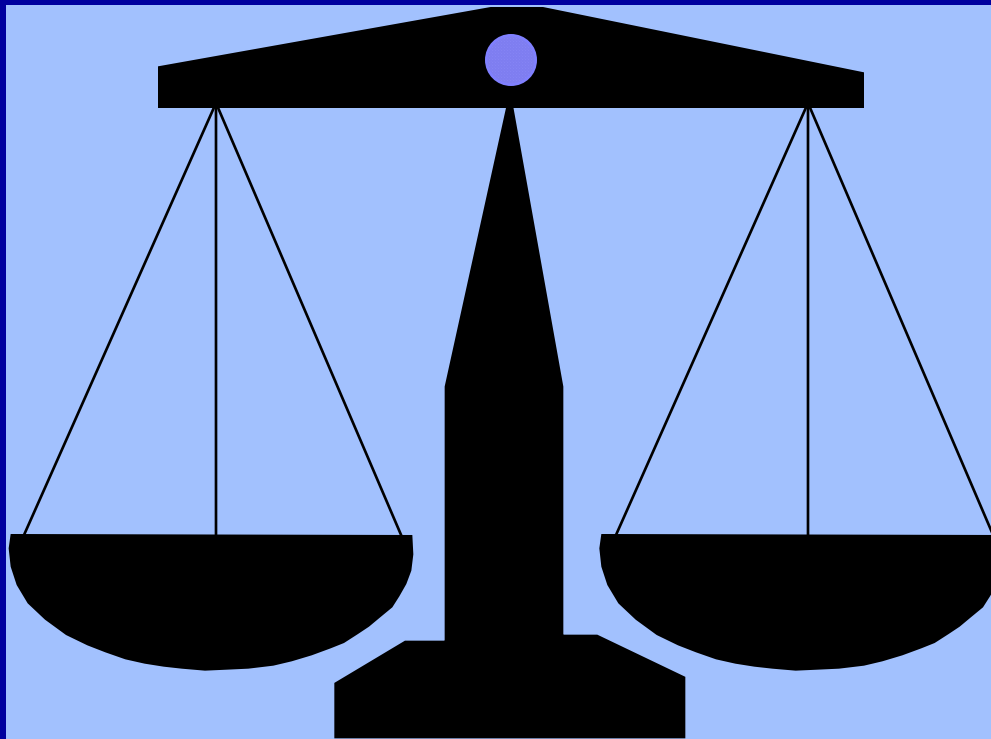
**Does everyone with PSC need a  
liver transplant?**

**No.**



# Risks vs. Benefits of Liver Transplantation

**Chance of Dying  
from  
Liver Disease**



**Chance of Dying  
from  
Transplantation**

# Signs of Decompensation in Cirrhotic Patients

- Ascites
- Jaundice
- Variceal hemorrhage
- Encephalopathy

# **The Risk of Liver Disease**

# Predicting Death in Patients with Cirrhosis

Model for End-Stage Liver Disease  
(MELD)

# MELD

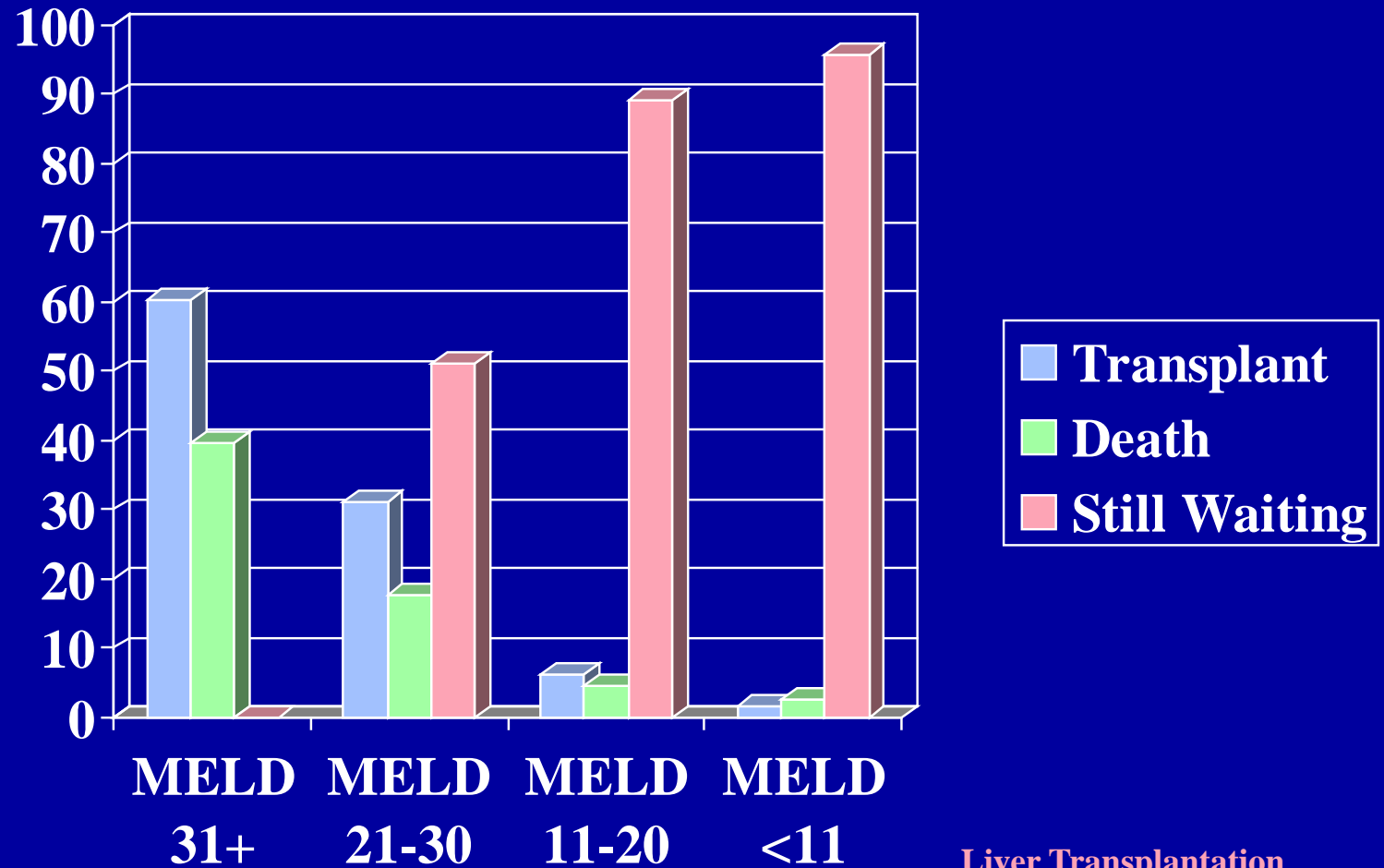
- **Bilirubin**
- **INR**
- **Creatinine**

# **MELD Advantages**

- **Uses only objective measures**
- **Predicts chance of death in the next 3 months**
- **Concordance 80-85%**

# 90 Day Outcomes by MELD

Patients on list Jan 1, 2005  
OPTN Annual Report 2006



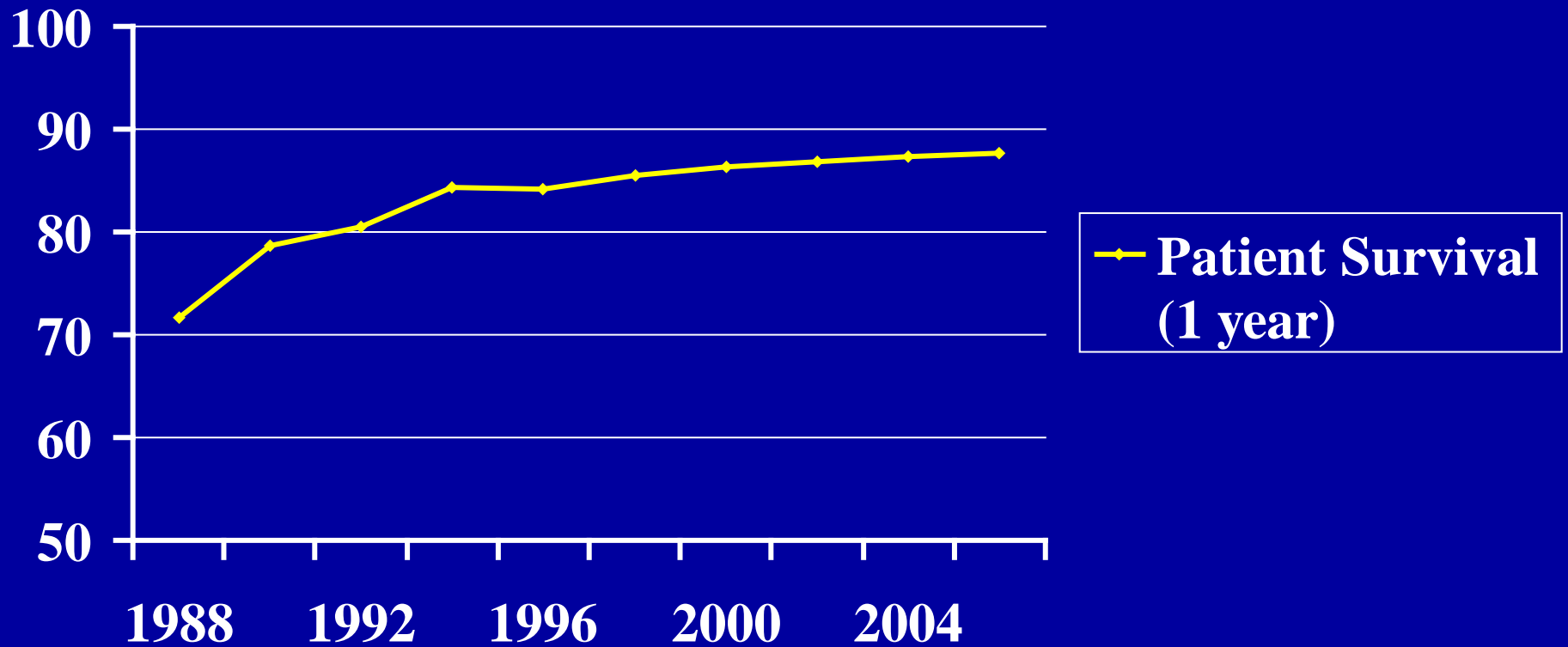
# **The Risk of Liver Transplantation**



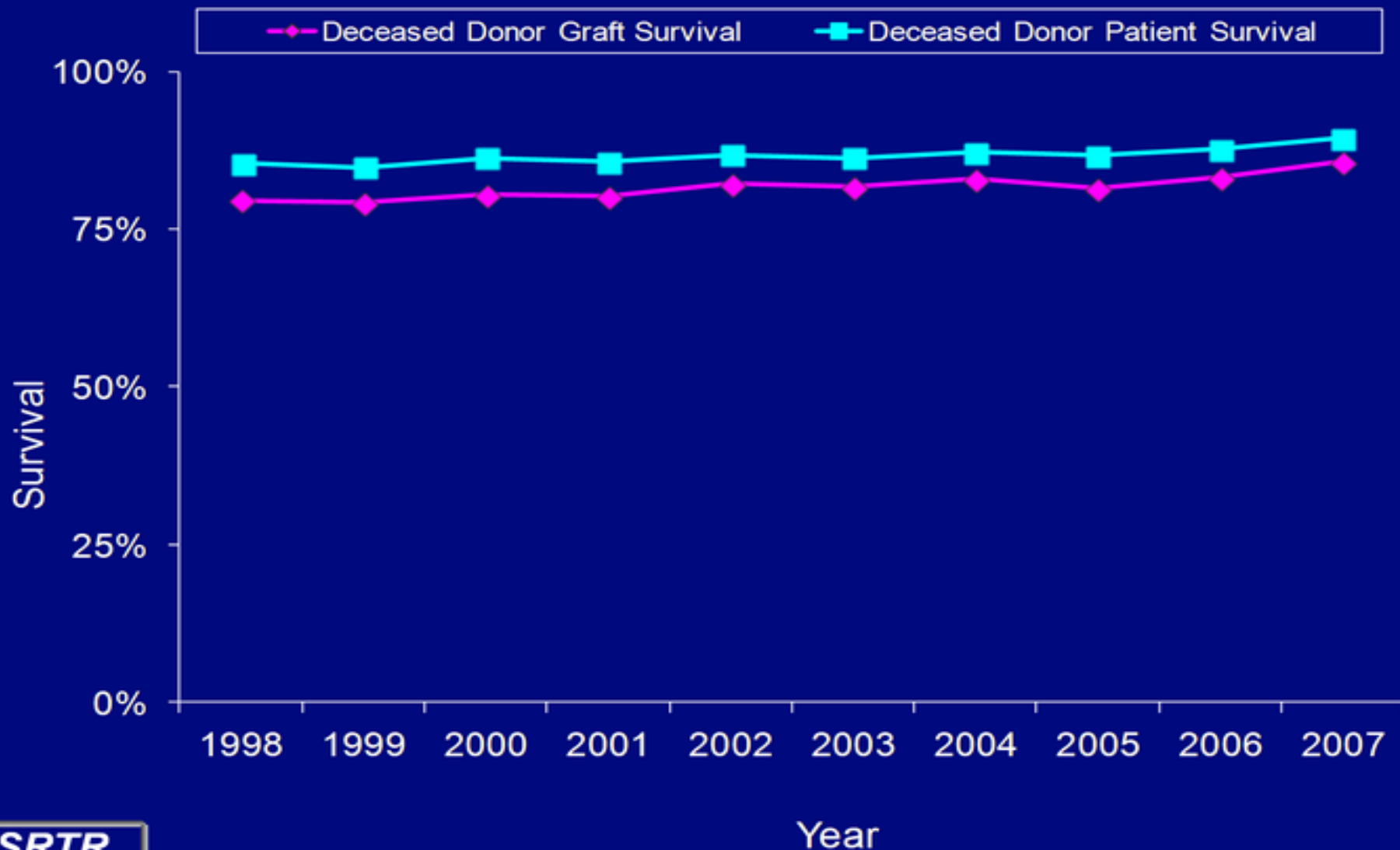
# **Improved Results with Liver Transplantation**

- **Refinement of surgical techniques**
- **Improved immunosuppressive medications/regimens**
- **Better organ preservation**
- **Improved patient selection and management**

# Patient Survival after Liver Transplant (During my career)



**Figure IV-9A: One-Year Adjusted Deceased Donor Graft and Patient Survival by Year of Transplantation**



**SRTR**

Source: 2009 OPTN/SRTR Annual Report, Tables 1.11a and 1.12a.

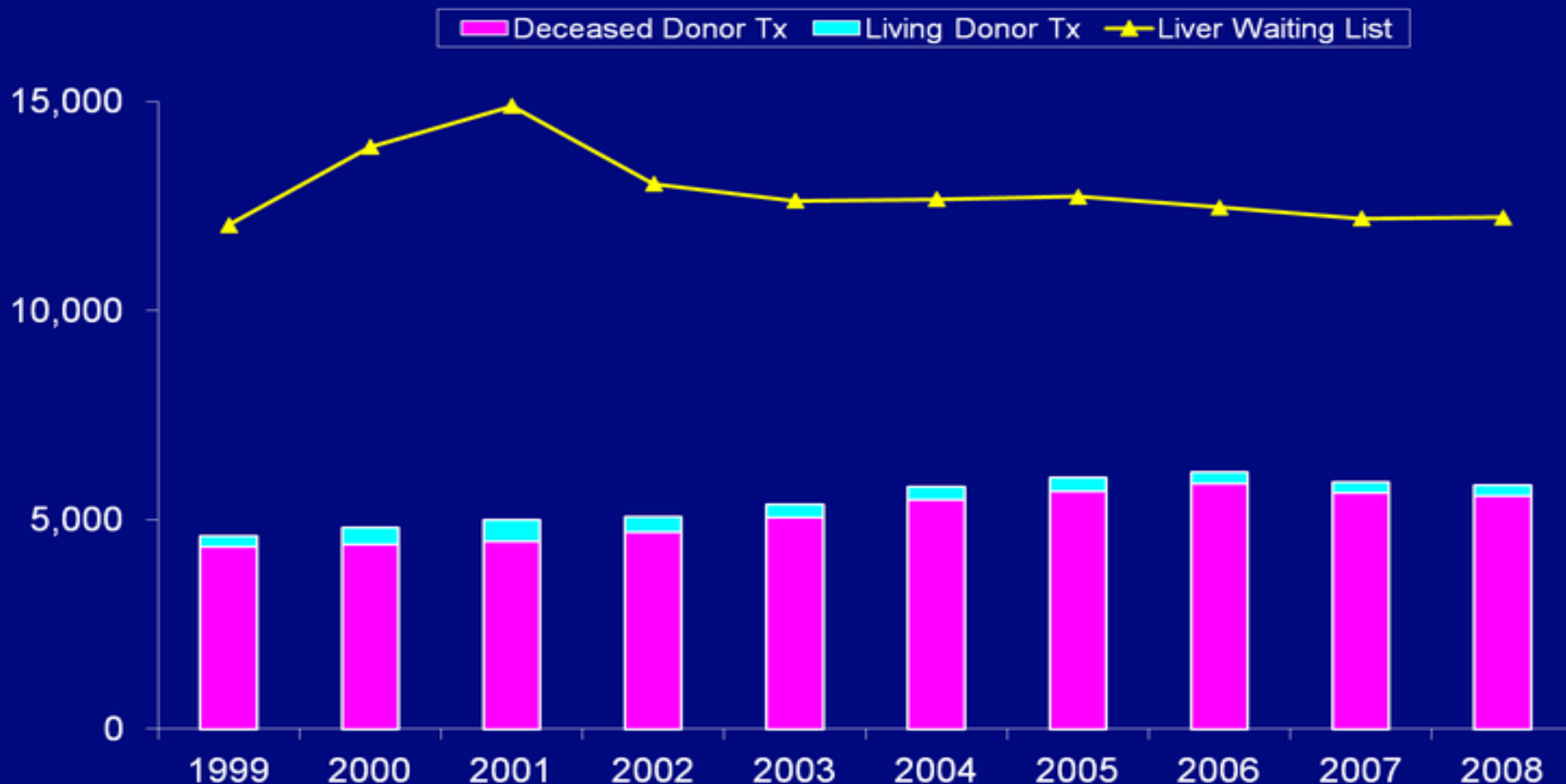
# **OLT Patient Survival by Status**

## **(United States: 2006-7)**

<b><u>Medical Urgency</u></b>	<b><u>% Survival</u></b>
<b>MELD 6-10</b>	<b>87.8%</b>
<b>MELD 11-14</b>	<b>90.0%</b>
<b>MELD 15-20</b>	<b>91.6%</b>
<b>MELD 21-30</b>	<b>88.4%</b>
<b>MELD &gt;30</b>	<b>80.8%</b>

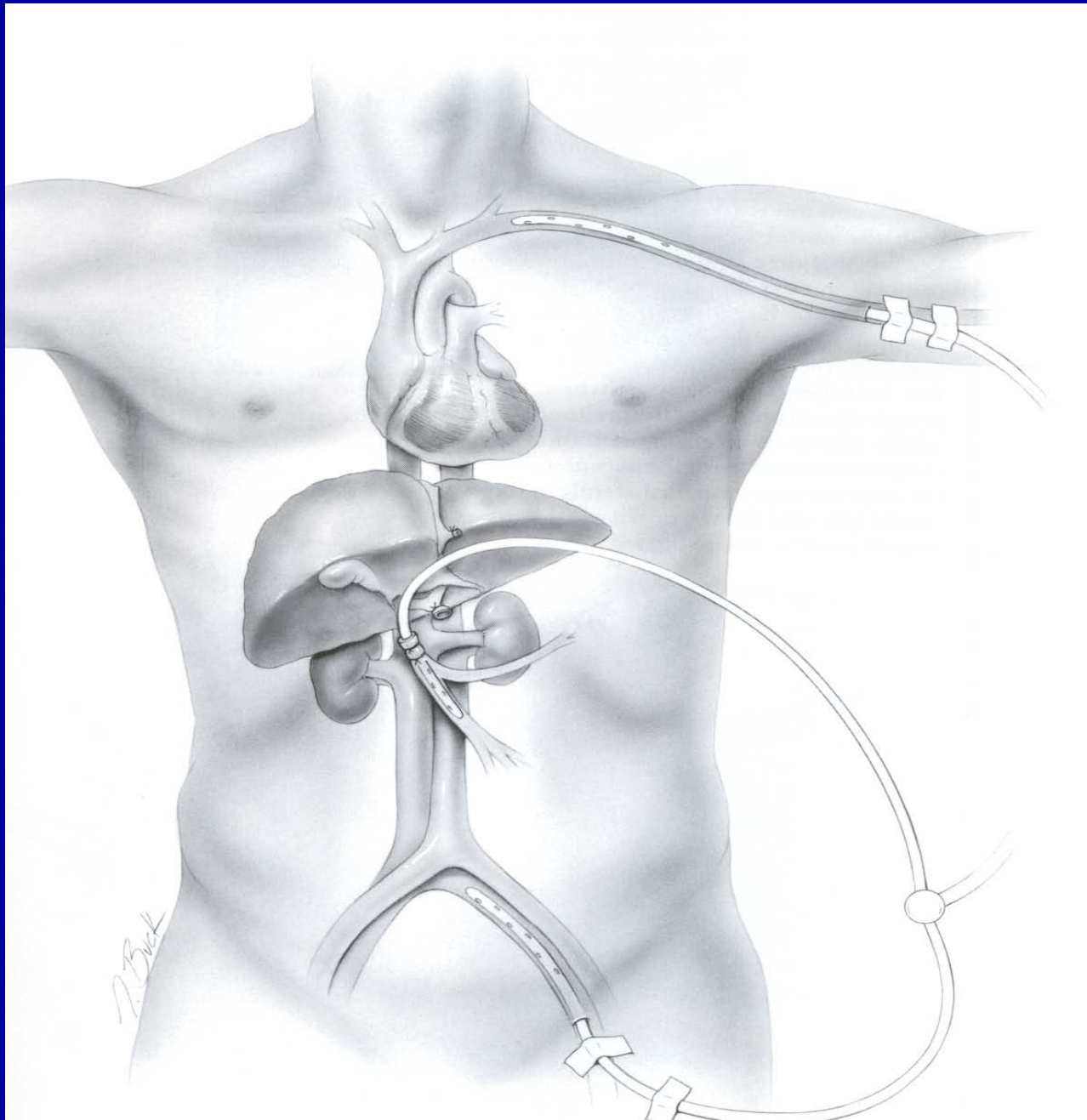
# **The Demand for Liver Transplantation**

# Figure I-13. Number of Transplants and Size of Active Waiting List



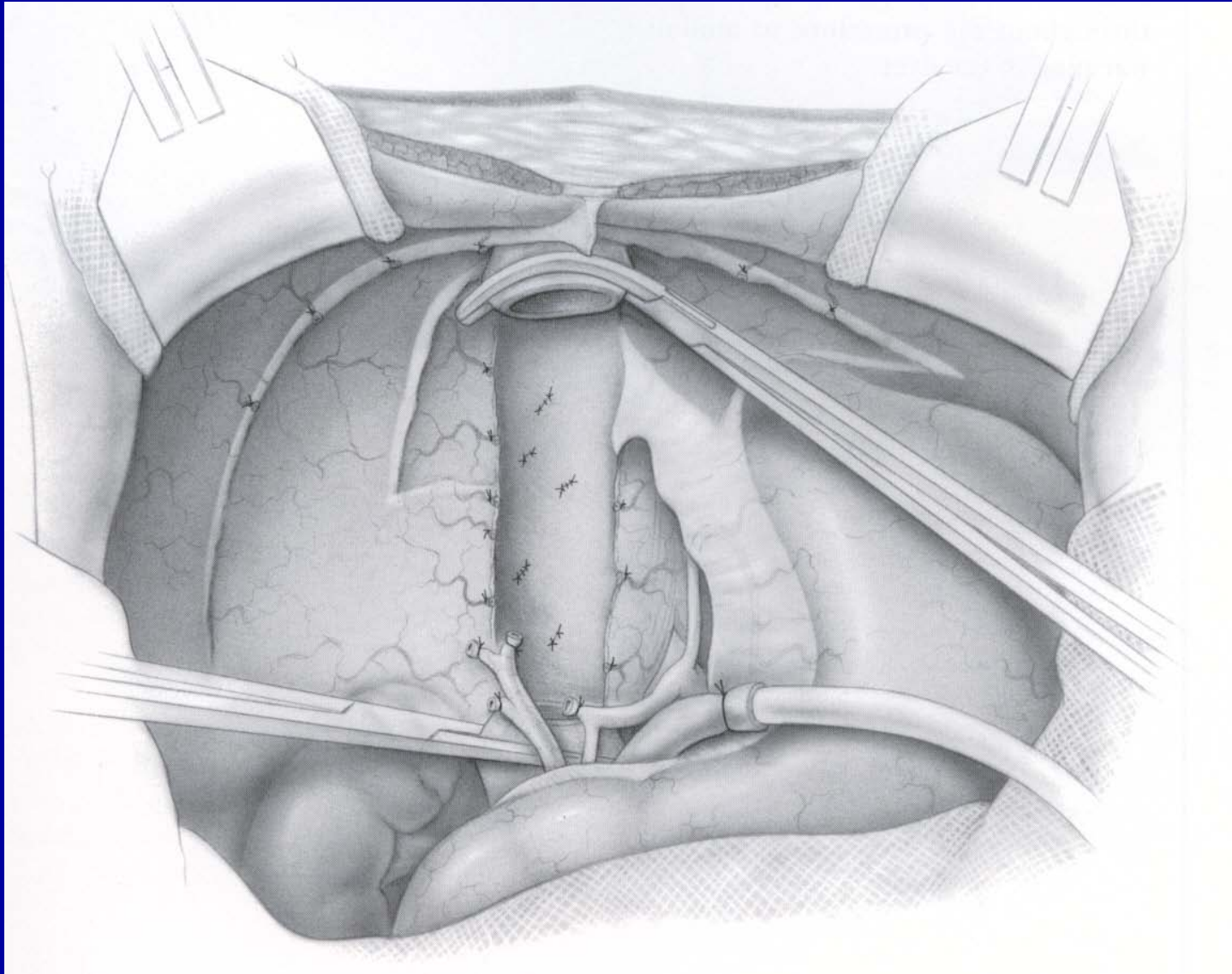
The number of patients awaiting a liver transplant at year-end peaked in 2001; this is clearly related to the introduction of the MELD/PELD allocation system in 2002. The number who received a deceased donor liver transplant has gradually increased, reaching a peak in 2006. The gap between the numbers of candidates and recipients has been slowly shrinking since 2002.

# **Liver Transplantation: Operative Technique**

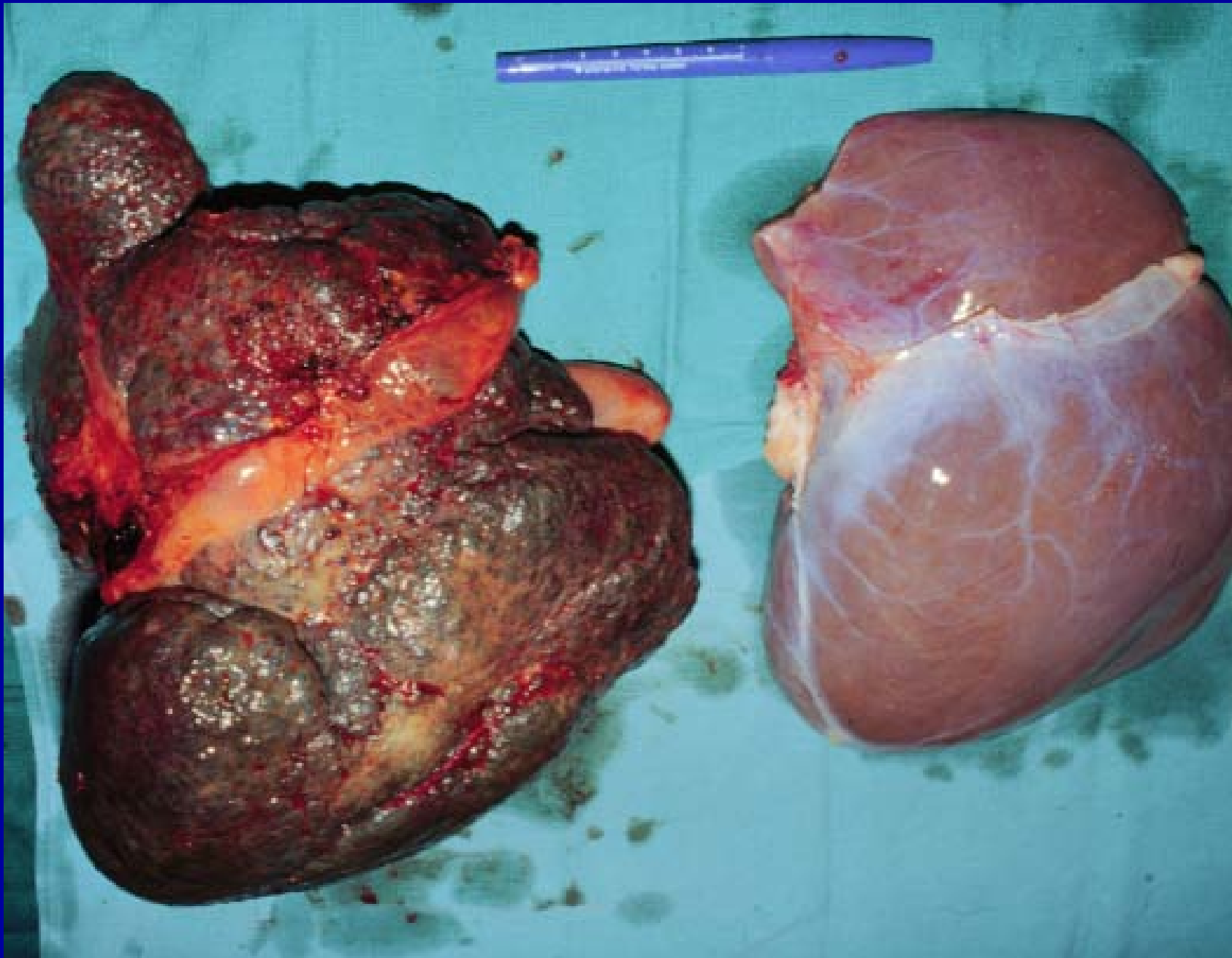


**Liver Transplantation**

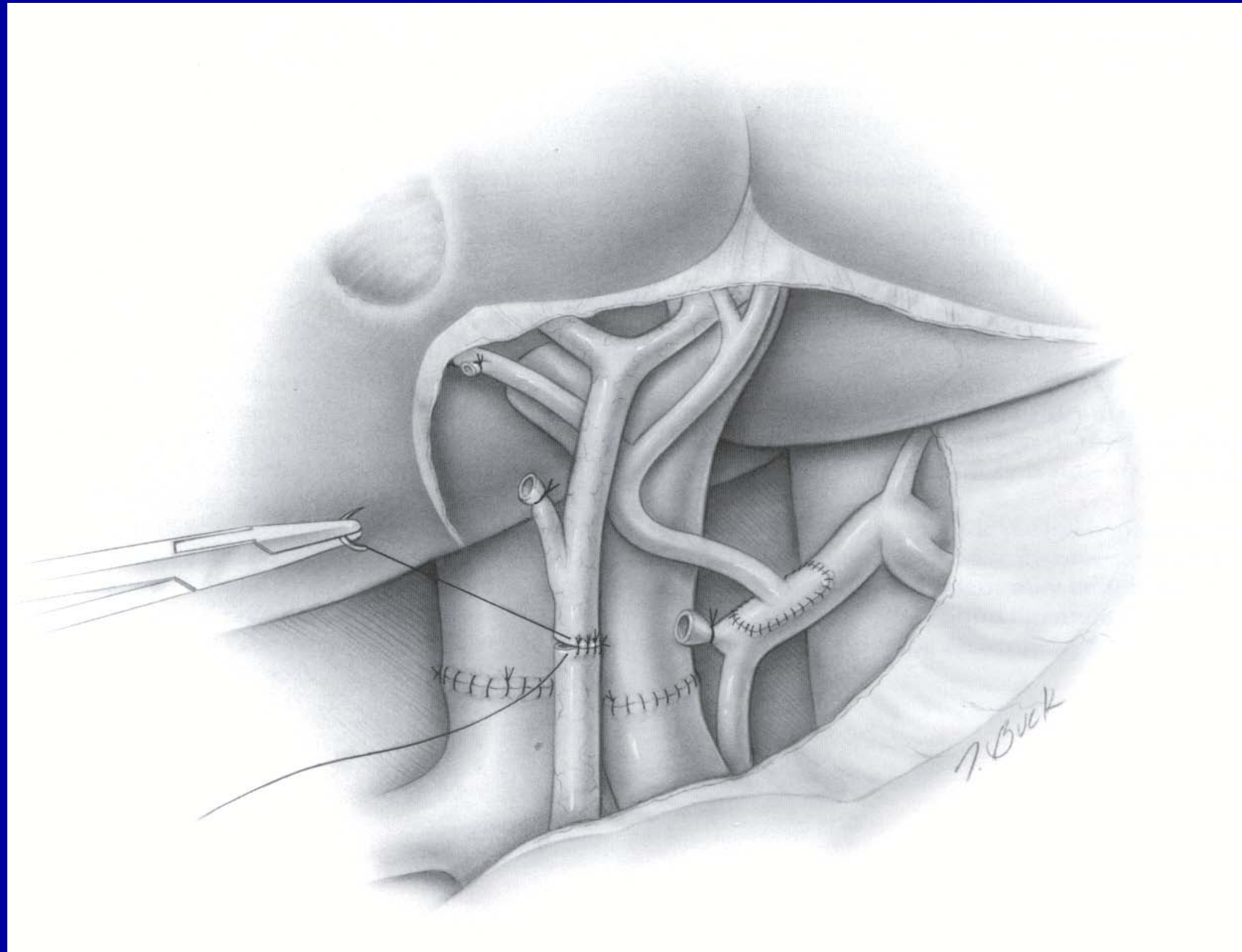




**Liver Transplantation**



**Liver Transplantation**



Liver Transplantation

# Complications after Liver Transplantation

- **Surgical / Technical**
- **Medical**

# **Surgical Complications after Liver Transplantation (Immediate)**

- **Bleeding**
- **Hepatic Artery Thrombosis**
- **Primary Non-Function**

# **Surgical Complications after Liver Transplantation (Delayed)**

- **Hepatic Artery Thrombosis**
- **Bile leak**
- **Biliary Stricture**

# **Surgical Complications after Liver Transplantation (Delayed)**

- **Rejection**
- **Infection**
  - ◆ **viral**
  - ◆ **bacterial**
  - ◆ **fungal**
- **Recurrence of Disease**
  - ◆ **~20% in PSC**

# Liver Transplants 2009-2010

<u>Year</u>	<u>Deceased Donor</u>	<u>Living Donor</u>
2009	6101	219
(PSC)	261	29
2010	6009	282
(PSC)	256	54



# **Living Donor Liver Transplants**

- **Began with children**
- **Has been performed in adults for about the last decade**
- **Not all liver transplant centers do live donor procedures**

# Advantages of LDLT

- **There are no organ allocation rules**
  - ◆ **Waiting time, MELD**
  - ◆ **Cholangiocarcinoma**

# Disadvantages of LDLT

- **Puts donors at risk**
  - **Not everyone has a donor**
- **Slightly more complications**

# Centers performing LDLT

- **California**
  - ◊ UCSF
  - ◊ Stanford
  - ◊ UCLA
  - ◊ USC
- **Arizona**
  - ◊ Mayo
  - ◊ Good Samaritan

# Centers performing LDLT

- **National**
  - **Northwestern**
  - **Lahey**
  - **Henry Ford**
  - **Mayo (Minnesota)**
  - **NY Presbyterian**
  - **NY Mt. Sinai**
  - **Pittsburgh**
  - **Penn**

# Life after Transplant

