Transjugular Intrahepatic Portosystemic Shunt

Professor A Watkinson
The Royal Devon and Exeter Hospital
TIPS

• When would this be required
• Patients with liver cirrhosis
• Blood flow from Portal system (Gut) cannot get through liver and tries to get around another way ie varices
• Cirrhosis can be caused by
  – Alcohol (Western world)
  – Hepatitis viral (Eastern world)
  – Primary condition (PBC)
Historical

Clinical Development

• 1982 Colapinto in Toronto TIPS 9mm PTA balloon. Shunt occluded within a few days

• 1988 Richter Germany TIPS Palmaz stent in Heidelberg assisted by Julio Palmaz
TIPS

Indications

- Uncontrolled variceal haemorrhage: 74%
- Secondary prevention of bleeding: 12.5%
- Ascites: 6.3%
- Portal hypertensive gastropathy: 2.9%
- Budd Chiari: 3.1%
- Ascitic pleural effusion: 1.0%
TIPS
Contra-Indications

- **Absolute**
  - Right heart failure

- **Relative**
  - Severe encephalopathy
  - Active systemic infection
  - Progressive or fulminant hepatic failure
  - *Polycystic liver*
  - *Portal vein occlusion*
Patient Selection

- Early intervention with TIPS
- Was used as salvage procedure
- Failed ERCP sclerotherapy
- Control bleeding with Sengstaken tube
- General anaesthetic - good for operator and protects airway
GORE PTFE VIATORR

£1200=00
Patient Information

VIATORR® TIPS ENDOPROSTHESIS

Nitinol Stent
Gold X-ray Marker
ePTFE/FEP Liner Material
Nitinol Stent
Gold X-ray Marker
TIPS Technique

- Challenge is hepatic to portal vein puncture
- Early days tried all ways of image assistance
- USS, CT etc
- Now with venography and “experience” using COOK TIPS 4 part TIPS set
10 tips for making perfect jam, jelly and marmalade. ... It is tempting to keep cooking to achieve a firmer set. A slightly looser jam is preferable to one that tastes ...


b) Cold Starts: Pull a container of soup or stew out of the freezer in the morning, put in the crock pot on keep warm, or low, and set the digital timer to cook for ...

Cooking Tip: Get a set of measuring spoons. The set will usually have 1/4 tsp., 1/3 tsp., 1/2 tsp., 1 teaspoon and 1 tablespoon. Dry measure cups look like little ...

Results 1 - 24 of 1655. Online shopping for Cookware Sets from a great selection of Kitchen & Dining; &...
A typical TIPSS kit: 1 - outer sheath, 2 - guide cath, 3 - metal stiffner, 4 - catheter for needle, 5 - TIPSS needle.
Rosch-Uchida 4 Part TIPS access set
TIPS-Technique

- Once punctured portal vein
- Measure gradient - < 12-15mmHg and minimal variceal filling
TIPS

• If visible varices
  • proceed to coil or alcohol embolization 20%
66 year old male with ETOH cirrhosis-recurrent variceal haemorrhage, failed endoscopic banding and sclerotherapy. Sengstaken tube in situ
Pressure gradient 28mmHg (Portal vein 36 mmHg, right atrium 8mmHg)
10mm balloon dilatation waists at entry into hepatic and portal veins
Pre PV 36- RA 8 gradient 28

Post PV 22-RA 13 gradient 9
TIPS

Fatal procedural complications

• 0-43% (3.0) < 150 procedures > 0.6-2.8% (1.4)
• Total: 30:1750 (1.7%)
• Cause
  • peritoneal, extraperitoneal and mediastinal haemorrhage
  • Hepatic artery, portal vein and liver capsule laceration
TIPS
Complications: Mortality

• < 30 days: 4-36% (10.9%)
• Cause: liver failure, sepsis, ARDS, MOF, Haemorrhage
• Prognostic factors
  • Child C
  • Acute variceal haemorrhage
  • Uncorrectable coagulopathy > 1.8
  • Serum bilirubin > 3.0 mg/dl
• At 5 years: 16-51% (31.7%)
TIPS

• Relatively safe in experienced hands
• Efficient method of treating variceal haemorrhage not responding to sclerotherapy
  • Cost effective
  • General anaesthetic
TIPS

• Experience no doubt leads to more rapid procedures
• Average procedure time in last 100 cases < 1 hour
• Good clinical expertise leads to good case selection which is reflected in outcome
• Early referral leads to better outcome
TIPS Nursing Perspective

- Sick Patients
- Poor liver function
- Low albumin with poor clotting
- Often prolonged INR
- Often coming down from ITU accompanied by anaesthetic team
- Sengstaken tube down and being transfused
TIPS

• Lifesaving procedure
• only performed in specialist centres
• Little alternative if not possible
• 30% will die within 5 years-usually chronic alcoholics
• Small number will go onto successful liver transplant although need to be abstinent for > 1 year
TIPS
Acute Oesophageal Variceal Bleeding

Glypressin

Endoscopy

Sclerotherapy

Rebleed

Well

Emergency TIPS

Rebleed

Sclerotherapy

Banding

Thrombin
TIPS

Acute Gastric Varices

- Glypressin
- Endoscopy
- Rebleed

Emergency TIPS