

# **PORTAL VEIN EMBOLIZATION FOR MAJOR HEPATECTOMY**

## *Information for patients*

### **Introduction**

- Liver resection or hepatectomy is considered to be a potentially curative treatment of primary liver malignancy. However, the post operative mortality can be very high when there is insufficient normal liver tissue left after surgery.
- It has been recommended that the ratio of future liver remnant to total liver volume should be at least 25% in patients with normal liver function; or 40% in patients with compromised liver function.
- The aim of portal vein embolization is to intentionally occlude the portal vein of the hepatic lobe to be resected and to induce selective enlargement of the future liver remnant. As a result, the volume of future liver remnant is increased after portal vein embolization and the operative morbidity is expected to be decreased.
- Not all patients respond to the procedure or result in significant liver hypertrophy.
- Transcatheter arterial chemoembolization for treatment of hepatocellular cancer may not be possible after portal vein embolization.

### **Procedure**

- Before the procedure, basic blood tests including complete blood count, clotting profiles and liver function test will be performed.
- CT scan of abdomen will be used for surgical planning and to measure the volume of future liver remnant.
- Under local anaesthesia and ultrasound guidance, a tributary of portal vein will be punctured by a thin needle through the skin. A small vascular sheath will be inserted following the same path.
- A small catheter will be inserted through the vascular sheath to cannulate the main portal trunk. Venogram of the portal veins will be performed by injecting contrast medium through the catheter to delineate the anatomy. You may feel mild nausea or mild warm sensation during injection of contrast medium.
- Portal vein tributaries will be selectively cannulated using the catheter. Occluding agents will be delivered to occlude the vessels. Choice of the occluding agents varies in different centers, these may include mixture of histoacryl tissue glue and lipiodol, fibrin polyvinyl alcohol particles, metallic coils, gelfoam particles, etc.
- All the catheter and vascular sheath will be removed at the end of the procedure.
- The procedure will take about one to three hours, depending on the complexity.
- Your vital signs including blood pressure, pulse rate, oxygen saturation level and consciousness level will be closely monitored during and after the procedure. You should not feel major discomfort or pain during and after the procedure.
- A follow-up CT scan of abdomen will be arranged two to four weeks after the procedure to assess the degree of liver hypertrophy.

## Potential Complications

- Post embolic syndrome – relatively common after portal vein embolization. This includes abdominal pain, abdomen distension, nausea, vomiting, tiredness and fever. The symptoms usually subside after a few days.
- Transient bleeding into the biliary tree, on bleeding elsewhere, e.g. under the liver capsule or into the abdominal cavity (rare).
- Migration of embolic material to the portal vein of the future remnant liver (rare).
- Main portal vein thrombosis (rare).
- Portal hypertension resulting in esophageal variceal bleeding (rare).
- Transient liver failure, especially in patients with liver cirrhosis (<5%).
- Septic necrosis of the embolized lobe due to arterial damage (rare).
- Pneumothorax (rare).
- Need for portal vein re-embolization.
- The overall adverse reactions related to iodine-base non-ionic contrast medium is below 0.7%. The mortality due to reaction to non-ionic contrast medium is below 1 in 250000.

## Disclaimer

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