BRONCHIAL ARTERY EMBOLIZATION

Information for patients

Introduction

- Bronchial artery embolization is mainly performed for control of life-threatening massive haemoptysis (expectoration of blood). It can also be performed for patients with recurrent episodes of smaller volume haemoptysis, who are not fit for surgery.
- Immediate control of haemorrhage is achieved in 75%-95% of patients, although 20% of these patients will rebleed within next 6 months. The long-term success rate is 45% to 58%.
- This procedure is mainly performed by radiologists with special training in interventional radiology in the Department of Radiology.

Procedure

- Before the procedure, chest X-ray, computed tomography (CT) and bronchoscopy may be performed to locate the bleeding site and the enlarged bronchial arteries.
- Under X-ray fluoroscopic guidance, angiography with digital subtraction facility is performed for delineation of vascular structures. The arterial access is usually via the common femoral artery at the groin region. Approach via brachial artery or radial artery at the upper limb is occasionally needed.
- The bronchial artery and the other arteries supplying the bleeding sites are identified and selectively cannulated with catheter. A smaller co-axial catheter through the original catheter is commonly used for superselective catheterization. The spinal artery is avoided or bypassed if it is identified.
- Particles are then injected through the catheter to block the arteries. Polyvinyl alcohol particles or acrylic co-polymer particles are commonly used. In specific situation, N-butyl-cyanoacrylate (NBCA) glue or metallic coils may be used.
- The procedure usually requires 2-4 hours.
- After the procedure, your vital signs (e.g., blood pressure and pulse rate) will be monitored. You can resume diet if the vital signs are stable.

Potential Complications

With the use of non-ionic contrast medium, coaxial catheters and digital subtraction angiographic technique, serious complications arising from bronchial artery embolization is not common.

- In some patients, the bronchial artery or the bleeding artery may not be successfully catheterized, due to its unusual location or it is very tortuous. In such situation, the patient may need surgical treatment.
- Chest pain (24-91%) and difficulty in swallowing (1-18%): These may occur 2-7 days after embolization and are usually self-limiting.
- Particles flowing to the spinal artery, causing spinal artery occlusion and resulting in paralysis of the legs and lower part of the body: very rare.

- Injury of bronchial artery causing blood clot accumulated in the chest or life-threatening bleeding: rare.
- Non-target embolization of branches of subclavian artery causing injury to other organs: brainstem, fingers. This may result in stroke, finger ischemia or even death: rare.
- Particles may flow across the abnormal communication between bronchial artery and pulmonary artery, causing obstruction of the small pulmonary artery. This may cause chest pain, shortness of breath and decrease in blood oxygen saturation: rare
- Vascular damage due to arterial puncture or manipulation of guidewire and catheter: rare.
- Transverse myelitis (inflammation of the spinal cord): rare.
- Fistula formation between the bronchus and esophagus: rare.
- Death of bronchial tissue: rare.
- Procedure related death is rare.
- The overall adverse reactions related to iodine-base 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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