

Supplementary methods

DEB-TACE procedures

Lung cancer: with routine disinfection of bilateral inguinal skin, the patient lay on the digital subtraction angiography (DSA) operating table, inhaled oxygen by nasal catheter, and was monitored by electrocardiograph (ECG). The right femoral artery was percutaneously punctured with local anesthesia, then a 5F catheter sheath was introduced into the right femoral artery. Subsequently, a 5F Cobra catheter was superselectively inserted into bronchial artery through the catheter sheath under the guidance of a 0.035-inch hydrophilic membrane guide wire. Next, bronchial angiography was performed to detect the supplying artery of tumor. After the supplying artery of tumor was identified, a SP microcatheter was introduced into the supplying artery of tumor under the guidance of the micro-guide wire, then 60 mg cisplatin was perfused via microcatheter, followed by the 300-500 μ m CalliSpheres® microspheres (CSM) (Jiangsu Hengrui Medicine Co., Ltd., Jiangsu Province, China) loading with oxaliplatin 100 mg. The embolization was stopped when the bronchial artery ending vessels were not developed and the velocity of trunk blood flow was obviously slowed down. After operation, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Renal carcinoma: after the right femoral artery was percutaneously punctured under local anesthesia, a 5F catheter sheath was introduced into the right femoral artery, and a 5F pigtail catheter was introduced into the aorta abdominalis, then DSA was performed to detect the supplying artery of tumor. Next, a 5F microcatheter was superselectively inserted into the supplying artery of tumor, and a diluent of 100 mg oxaliplatin was infused into it through the catheter, followed by 300-500 μ m CSM loading with pirarubicin 60 mg. The embolization was stopped when the tumor staining was disappeared. After that, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Gastric cancer: after the supplying artery of tumor was identified by the DSA as mentioned above, superselective catheterization was performed for the gastric artery with microcatheter, and 500 mg aqueous solution of fluorouracil was infused into the supplying artery of tumor, followed by 300-500 μ m CSM loading with irinotecan 160 mg. After the complete embolization was confirmed by DSA as described above, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Tonsillar squamous cell carcinoma: after the right femoral artery was percutaneously punctured under local anesthesia, a 5F catheter sheath was placed into the right femoral artery, and a 0.035-inch hydrophilic membrane guide wire and a 5F vertebral artery catheter were introduced through the sheath, then under the coordination of guide wire and the vertebral artery catheter, the hypertension angiography was performed on the right common carotid artery and right external carotid artery, which showed that there were densely stained lesions in the right carotid region, and the multiple branches of the right lateral carotid artery were offending vessels. Next, the right external carotid artery was injected with 2 mg of raltitrexed solution (50ml) and 10 mg of lobaplatin solution (50 ml). Subsequently, the offending vessel of tumor was superselectively catheterized using the COOK microcatheter and microwire. After excluding the co-trunks of spinal artery by angiography, the offending vessel of tumor was embolized with 300-500 μ m CSM loading with 100 mg oxaliplatin via microcatheter. Re-examination by angiography showed that there was still some blood supply of tumor, and gelatin sponge particles with diameter of 560-710 μ m were added. Then the guide wire was inserted into the right vertebral artery with the cooperation of the vertebral artery catheter. Angiography showed that a branch of the right vertebral artery was supplying blood to the tumor area, and its blood vessels were abnormally slender, and the microcatheter failed to enter the tumor area by superselective catheterization. For this reason, the right subclavian artery was superselectively catheterized using the

vertebral artery catheter. The hypertensive angiography showed abnormal staining at the end of one branch, so the offending vessel of the branch was superselectively catheterized, infused with 2 mg of raltitrexed solution (50ml) and 10 mg of lobaplatin solution (50 ml). Then 150-350 μ m gelatin sponge particles mixed with contrast agent for about 10ml were injected into the offending vessel of the branch by catheter after excluding the co-trunk of spinal artery by repeated angiography. After the complete embolization was confirmed, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Left lower extremity fusocellular sarcoma: after the right femoral artery was punctured and the catheter sheath was placed, DSA was performed on the left lower extremity, showing that there were multiple branches of the left deep femoral artery and superficial femoral artery supplying blood to the tumor. Then microcatheter was introduced after cisplatin infusion of 90 mg, and superselective catheterization was carried out for the supply arteries of the tumor, which were subsequently embolized by the 100-300 μ m CSM loading with 60 mg pirarubicin. After the complete embolization was confirmed, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Sacroccygeal yolk sac tumor: after the right femoral artery was percutaneously punctured under local anesthesia, a 5F catheter sheath was placed into the right femoral artery, and a 5F straight-headed lateral empty catheter was introduced through the sheath, then abdominal angiography was performed, which showed that bilateral internal iliac artery and median sacral artery were involved in the blood supply of tumor. Subsequently, a 4F Cobra catheter was superselectively inserted into right internal iliac artery through the catheter sheath under the guidance of a 0.035-inch hydrophilic membrane guide wire. Angiography showed abnormal staining and arteriovenous fistula, then 350-560 μ m PVA was infused for embolization of fistula. When the arteriovenous fistula was completely embolized, 300-500 μ m CSM loading with 100 oxaliplatin was infused into the feeding artery of the tumor. Embolization of

left internal iliac artery and median sacral artery were performed as well as above. After the complete embolization was confirmed, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Small bowel adenocarcinoma with uterine metastasis: after the right femoral artery was percutaneously punctured under local anesthesia, a 5F catheter sheath was placed into the right femoral artery, and the loach guide wire and 5F Cobra catheter were introduced through the sheath. Then bilateral internal iliac artery angiography was performed, showing that bilateral uterine arteries were slender, and staining of the distal arteries was disordered. Superselective catheterization was carried out for the bilateral uterine arteries, 100 mg oxaliplatin and 2 mg raltitrexed hydration solution were infused, followed by the 100-300 um CSM. After the complete embolization was confirmed, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.

Bladder cancer: after the right femoral artery was percutaneously punctured under local anesthesia, a 5F catheter sheath was placed into the right femoral artery, then 5F Cobra catheter was introduced guided by a 0.035-inch hydrophilic membrane guide wire through the sheath. Bilateral internal iliac artery angiography was performed showing that bladder artery was slender and disordered, and left bladder artery had the advantage of blood supply for tumor. Then with a 2.6F SP microcatheter system across the superior gluteal artery, perfusion chemotherapy of 80 mg oxaliplatin was performed, subsequently, 300-500 um CSM was infused until the blood flow of the tumor feeding artery was stopped. After the complete embolization was confirmed, extubating, sheath pulling as well as pressure bandaging were carried out, and the patient returned to the ward.