



聖保祿醫院
St. Paul's Hospital

NEWSLETTER
院訊

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“I made myself all things to all men” (1 Cor. 9:22)
“我為一切人成為一切” (格前 9:22)

Issue 67 | August 2010
第六十七期 | 二零一零年八月

Medical Information
醫療資訊

Application of Interventional Radiology to Improve Patient Satisfaction & Quality of Life

Introduction

Interventional radiology is regarded as ‘surgery of the 21st century’. Charles Dotter, the interventional radiologist who pioneered this technique, is known as the “Father of the Interventional Radiology”. Interventional radiology is a subspecialty of radiology in which minimally invasive procedures are performed under image guidance – imaged guided surgery. Some of these procedure are done for purely diagnostic purposes such as angiography, while others are done for treatment purposes, such as angioplasty. Interventional radiologists use needles and guidewires instead of scalpels to perform procedures under image guidance.

There is a wide spectrum of interventional radiology; which includes nonsurgical ablation of tumors to kill cancer, embolotherapy to occlude the blood supply of the tumor and hence stop bleeding, thrombolysis to clear blood clots, and carotid artery angiography and stenting to prevent stroke in post-head and neck radiation carotid stenosis. Imaging modalities for guiding interventional radiology procedure include computed tomography (CT), ultrasound, fluoroscopy and magnetic resonance imaging (MRI).

Patients suffering from hemorrhages, organ obstructions, vascular diseases, renal failure, or complications from long term treatments such as infections at the sites of catheter drainage greatly benefit from interventional radiology procedures as adjunctive therapies or as primary treatment measures. With the aging population in Hong Kong, these treatments will become necessary to reduce medical costs as well as improve patient comfort.

Advantages of interventional radiology include the following:

1. It is an alternative therapy for non-surgical candidates, especially in emergency situations.

2. It is minimally invasive, promoting a fast rate of recovery
3. Most patients may be discharged within the same day after receiving treatment
4. Procedures are mainly performed under local anesthesia, minimizing the risks associated with general anesthesia, as well as being available to those unsuitable to undergo general anesthesia.
5. Procedures may be repeatedly performed if necessary
6. Less costly than conventional procedures
7. Increase in patient satisfaction and overall quality of life

In fact, interventional radiology is one of the 10 subspecialties of radiology; which include vascular/ interventional radiology, neuroradiology, musculoskeletal radiology, gastrointestinal radiology, genitourinary radiology, paediatric radiology, chest radiology, ultrasound, mammography and nuclear medicine. There are two major divisions in interventional radiology, namely vascular interventional radiology and Non-vascular interventional radiology. Vascular interventional radiology is subdivided into (1) body interventional radiology (below head and neck) and (2) neurointerventional radiology (head and neck including the spine).

To meet the public demand for efficient and satisfying patient care, St. Paul's hospital is now equipped with new angiography, CT and ultrasound systems for image guidance. Apart from image guided biopsies and drainage of abscess, fluid collection, biliary obstruction or urinary obstruction; a summary of interventional radiology procedures commonly performed in a general hospital is listed below, in alphabetical orders of specialties, some with illustrations.

1. ENT
 - (a) Embolization for epistaxis
 - (b) Pre-operative embolization for hypervascular nasal tumors
2. Gastrointestinal
 - (a) Percutaneous gastro-jejunostomy
 - (b) Embolization of gastrointestinal bleeders or pseudoaneurysms
3. Hepatolo-biliary
 - (a) Embolization of ruptured hepatocellular carcinoma
 - (b) Embolization of bleeding hepatic pseudoaneurysm
 - (c) Transarterial chemoembolization of hepatocellular carcinoma
 - (d) Radiofrequency ablation of hepatocellular carcinoma
 - (e) Percutaneous ethanol ablation for primary or metastatic liver tumors
 - (f) Transjugular liver biopsy
 - (g) Biliary stenting and application of low profile device [Fig. 1]
 - (h) Percutaneous transhepatic biliary drainage
4. Musculoskeletal
 - (a) Pre-operative embolization of hypervascular primary or metastatic tumors
 - (b) Embolization of bleeding primary or metastatic tumors
 - (c) Vertebroplasty for compression fracture or spinal metastasis
 - (d) Cementoplasty in bone metastasis
 - (e) Radiofrequency ablation in bone tumors
5. Nephrology
 - (a) Angioplasty in arterio-venous fistulas
 - (b) Angioplasty in dialysis graft stenosis
 - (c) Thrombolysis in thrombosed arterio-venous fistula or dialysis graft
 - (d) Percutaneous insertion of dialysis catheter e.g PermCath or Bioflex catheters
6. Obstetrics & Gynecology
 - (a) Pelvic embolization in massive post-partum hemorrhage [Fig. 2]
 - (b) Uterine fibroid embolization
7. Oncology
 - (a) Central line insertion
 - (b) Superior vena cava stenting in superior vena caval obstruction [Fig. 3]
 - (c) Embolization - bleeding primary or metastatic tumors, pre-operative embolization of hypervascular tumors, embolization of expansile tumors to decrease pain
 - (d) Carotid stenting in carotid stenosis due to head & neck radiation [Fig. 4]
 - (e) Embolization of splenic artery for hypersplenism
8. Respiratory
 - (a) Bronchial artery embolization in massive hemoptysis
 - (b) Thrombolysis of SVC thrombosis
 - (c) Pulmonary arteriogram +/- embolization of pulmonary arterio-venous malformation
9. Urology
 - (a) Embolization for renal angiomyolipomas
 - (b) Ureteric stenting and application of low profile device
10. Vascular
 - (a) Angioplasty or stenting in peripheral vascular disease
 - (b) Carotid stenting in carotid stenosis
 - (c) Subclavian stenting in subclavian stenosis
 - (d) Renal artery stenting in renal arterial stenosis – native or grafted kidney
 - (e) Thrombolysis +/- angioplasty or stenting in arterial occlusion for limb salvage
 - (f) Thrombolysis +/- angioplasty or stenting in venous thrombosis
 - (g) IVC filter insertion or retrieval
 - (h) Testicular vein embolization

A multi-disciplinary approach with a team, consisting of clinicians, specialists, and interventional radiologists, is required to discuss about the procedures for the best benefit of patients. All consultations and referrals are welcome.

Image Caption

Fig. 1

Caption: F/55 Inoperable carcinoma of pancreas with duodenal involvement. Failed ERCP. Percutaneous transhepatic biliary drainage, internalization & metallic stenting (10x68mm) & application of low profile device. (a) Post-stenting (arrow head) and application of low profile device (arrow) with biliary catheter in-situ to main biliary access. (b) Low profile device with the biliary catheter cut to the level of the device. Hence, the patient does not have to bear a bedside bag.

Fig. 2

Captioned: F/33 Para 1. Normal spontaneous delivery. Primary massive post-partum hemorrhage following removal of placenta & she presented with persistent per vaginal oozing which was not responsive to syntocinon drip and early disseminated intravascular coagulation. (a) Selective left uterine arteriogram, pre-embolization. (b) Post-embolization left uterine arteriogram, showing marked reduction in uterine vascularity. (c) Selective right uterine arteriogram, pre-embolization. (d) Post-embolization right uterine arteriogram, showing marked reduction in uterine vascularity.

Fig. 3

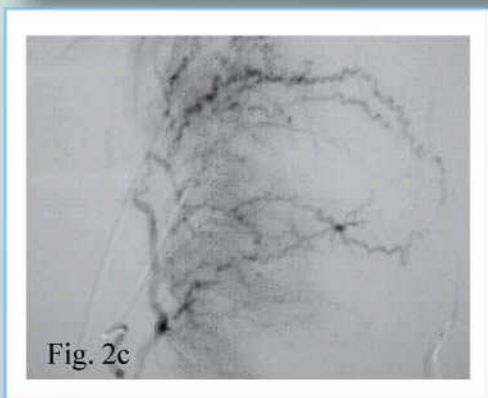
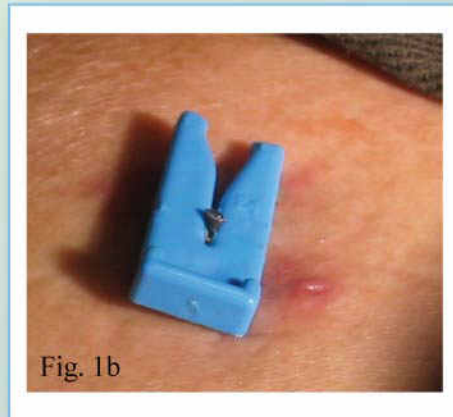
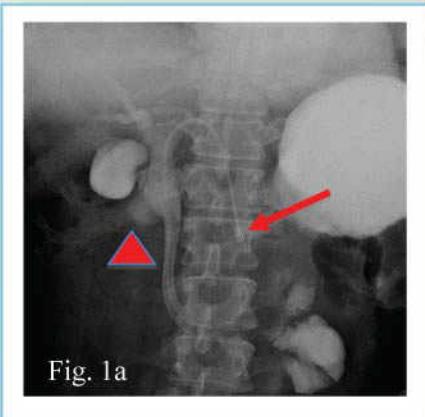
Caption: M/58 The patient was suffering from bronchogenic carcinoma. He presented with dyspnoea & puffiness of face. (a) Superior vena cavogram showing marked stenosis due to tumor compression. (b) Post-stenting superior vena cavogram using 16x40mm Wallstent.

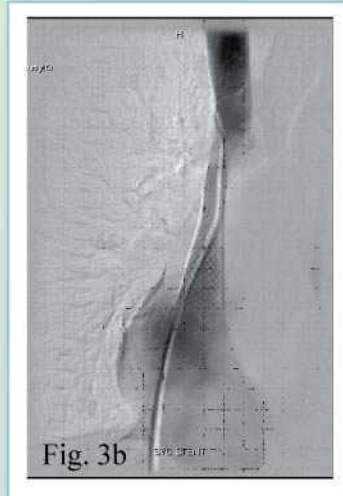
Fig. 4

Caption: M/78 Carcinoma of supraglottis T3N1 status post total laryngectomy & radiotherapy in 1999. The patient presented with recurrent transient ischemic attack in form of left lower limb weakness due to post-radiotherapy bilateral carotid stenoses which was demonstrated by carotid Doppler (not shown). (a) Right common carotid arteriogram showed multiple stenoses (arrows) which are characteristic for post-radiation complication. (b) Right common carotid arteriogram after stenting using 7x50mm stent.



Image





Dr. K.Y. Lau
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*I*ntroduction of new faces 員工動態

Hi everyone, I am Winnie Ma who just joined the new rehabilitation Centre of St. Paul's Hospital. I am a Physiotherapist by training from the United States. I have also lived, and worked in New York for many years before returning to Hong Kong. Experience of living in both cities has been wonderful because I love to interact with people from various back ground and with different cultures. Also, I have worked at St.Teresa's Hospital for almost 8 years before joining St. Paul's Hospital. My clinical exposure in the two international cities has been a rewarding one .Having received my Master degree in Public Health at HKU, I am able to apply my knowledge and have changed my attitude towards health care management being more global and holistic from the primary health approach. Besides, I love traveling, badminton and playing with my dog at leisure time. Any dog lovers would like to share dog keeping tips? Please do not hesitate to find me at the rehabilitation Centre! My goal is to contribute in developing high quality and comprehensive rehabilitation service for the community. Finally, I wish every one of you enjoy working at St. Paul's Hospital with me for the years to come and I hope our career and personal development will continue to flourish and grow with the organization.

