# The First Asian Symposium of Emergency Radiology

**Date:** June 30, 2012  08:30~17:00

**Sponsoring organizations:** Wong Vung-Hau Radiology Foundation  
Radiological Society of ROC (Taiwan)

**Co-organization:** Dept. of Emergency Medicine, Taipei Shin Kong Wu Ho-Su Memorial Hospital

**Place:** Auditorium (B1) Shin Kong Wu Ho-Su Memorial Hospital  
No. 95, Wen-Chang Road, Taipei 111, Taiwan

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<td>Chui-Mei Tiu, M.D.</td>
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</table>
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PROFILE

Graduated from Massachusetts General Hospital (MGH) and Harvard Medical School in Boston, Massachusetts, Dr. Rathachai Kaewlai is board-certified by the American Board of Radiology. Dr. Rathachai Kaewlai is a Thai radiologist with experience in image interpretation in subspecialty of emergency radiology, thoracic and body imaging. Dr. Rathachai Kaewlai is the head of the Division of Emergency Radiology at Ramathibodi Hospital. He is also in charge of Quality Assurance in the Dept. of Radiology at Bumrungrad International Hospital.

EXPERIENCE

ASSISTANT RADIOLOGIST, CLINICAL INSTRUCTOR, CLINICAL ASSISTANT AND CLINICAL FELLOW, MASSACHUSETTS GENERAL HOSPITAL (MGH) AND HARVARD MEDICAL SCHOOL, BOSTON, MASS., USA — 2006- 2010

Four years and two months at MGH, Dr. Rathachai Kaewlai was trained in emergency radiology and thoracic radiology. He had involved in several quality-related projects in the department as well. He was a staff radiologist in emergency radiology in his last year at MGH.

CLINICAL FELLOW IN RADIOLOGY, AULTMAN HOSPITAL, CANTON, OHIO, USA — 2005-2006

Body imaging (CT/MR/US) clinical fellowship, with experience in ultrasound-guided percutaneous non-vascular interventions.

RADIOLOGIST, RAMATHIBODI HOSPITAL, BANGKOK, THAILAND — 2004-2005

General radiologist.

EDUCATION

- Massachusetts General Hospital and Harvard Medical School, Boston, Mass., USA — American Board of Radiology(Diagnostic Radiology), 2010; Clinical Fellowships in Emergency Radiology and Thoracic Radiology, 2006- 2008
- Northeastern Ohio College of Medicine, Rootstown, Ohio, USA — Clinical Fellowship in Body Imaging (CT/MR/US), 2005-2006
- Armed Force Institute of Pathology, Washington, DC, USA — 6-week course in Radiologic Pathology, 2004
Sukhothaithammathirat Open University, Nonthaburi, Thailand — BBA (General Management), 1999-2005

Siriraj Hospital, Mahidol University, Bangkok, Thailand — Doctor of Medicine (MD), 1993-1999

SKILLS

Clinical: Radiography, CT, ultrasound and MRI interpretation of the body (thorax, abdomen, musculoskeletal), emergency radiology, minor percutaneous image-guided procedures

Quality & Administrative: Experiences in quality-related projects such as peer review, CT radiation dose reduction, etc.

Editorial/Research: Ad hoc reviewer for European Radiology, Journal of Postgraduate Medicine, Emergency Radiology and International Journal of Clinical Practice. Research co-investigator in two prospective trials at MGH funded by Bracco Diagnostics, Inc. (Prospective cohort study evaluating the incidence of nephrogenic systemic fibrosis in patients with stages 3 to 5 chronic kidney disease undergoing MRI with the injection of MultiHance; Prospective study evaluating the incidence of nephrogenic systemic fibrosis in patients with stages 4 to 5 chronic kidney disease without exposure to gadolinium-based contrast agents within the past 10 years). Several published and to-be-published original investigations

TEACHING (international)

Feb 31, 2012 International Conference of Emergency Medicine, Bangkok, Thailand (Emergency Radiology)

Jun 5-6, 2011 Asian Congress of Emergency Medicine (ACEM), Bangkok, Thailand (Workshop Imaging, X-Rays that can trip emergency physicians, How to read emergency head CT)

May 19, 2011 ASEAN Association of Radiology (AAR) Meeting, Singapore (Chest trauma, Abdomen trauma)

Mar 2010 Royal College of Radiologists of Thailand (RCRT), Pattaya, Thailand (MRI of acute abdomen)

Mar 2010 Asian-Oceanian Congress of Radiology (AOCR), Taipei, Taiwan (CT of thoracic trauma)

Mar 2009 Royal College of Radiologists of Thailand (RCRT), Bangkok, Thailand (CT of acute abdomen)

TEACHING (Local)

Mar 30-31, 2012 Radiology Board Review. Prince of Songkla Hospital, Hatyai, Songkla (Case-based approach lectures)

Mar 22, 2012 Royal College of Radiologists of Thailand (RCRT), Bangkok, Thailand (Acute abdomen)

Jan 14, 2012 Ramathibodi Surgical Forum, Bangkok, Thailand (Trauma imaging)

Oct 8-9, 2011 Ramathibodi Emergency Radiology Annual CME Course, Bangkok (Face, Spine, Chest
Trauma & Introduction)
May 13-14, 2011 Radiology Board Review. Prince of Songkla Hospital, Hatyai, Songkla (Case-based approach lectures)
May 8, 2011 Radiology for Surgery Board Review. King Mongkut Hospital, Bangkok (Case-based approach lecture)
Mar 2011 Rajvithi Hospital Emergency Medicine Department, Bangkok (Imaging of acute abdomen)
Feb 2011 Rajvithi Hospital Emergency Medicine Department, Bangkok (Imaging of head trauma)
Jan 2011 Hand Course by the Hand Surgeon Association of Thailand, Ramathibodi Hospital (Imaging of wrist/hand trauma)
Dec 2010 Ultrasound workshop for emergency physicians, Ramathibodi Hospital (Introduction, US of aorta/IVC/DVT, workshop)
2008, 2005 Thai Association of Emergency Medicine Postgraduate Courses
Author of www.RiTradiology.com, a website dedicated to teaching radiology.

CURRENT LICENSURE AND CERTIFICATION
Thai medical license (24371, lifelong); ECFMG certificate (0-633-095-5, 02/2005 - 01/2012);
Massachusetts full medical license (231046, 07/2007 - 09/2012); American Board of Radiology (05/2010)

ACTIVE PROFESSIONAL MEMBERSHIPS
Local: Medical Council of Thailand, Thai Association of Emergency Medicine, Medical Ultrasonic Society of Thailand, Royal College of Radiologists of Thailand

International: Radiological Society of North America (RSNA), American Society of Emergency Radiology (ASER), American Roentgen Ray Society (ARRS), American College of Radiology (ACR), Massachusetts Medical Society (MMS), American Medical Association (AMA)

HONORS AND PRIZES
□ Faculty of Medicine, Siriraj Hospital, 2nd degree of honor. 1999
□ ESTI (European Society of Thoracic Imaging) 2008, Nice, France. Cum Laude for education exhibits
“Portable ICU chest x-ray: where the calamities often lurk!”. 2008

ASER 2008, Houston, TX. Second place for education poster “MDCT of diaphragmatic trauma”. 2008

PUBLICATIONS - PROFESSIONAL EDUCATIONAL MATERIALS OR REPORTS

2. Kaewlai R, Rodriguez CP, Nazinitsky KJ. Scientific exhibits “Case of the day” ASER Postgraduate Course and Annual Conference 2006, Washington, DC

PUBLICATIONS - PEER-REVIEWED PUBLICATIONS (PUBMED SEARCHABLE)


12. Maes RM, Abujudeh HH, Kaewlai R. E-mail alert system enables communication of important but nonurgent radiologic findings. Radiology 2010;254:571-580.


21. Abujudeh HH, Gee MS, Kaewlai R. In emergency situations, should serum creatinine be checked in all patients before performing second contrast CT examinations within 24 hours? J Am Coll Radiol 2009;6:268-273

PUBLICATIONS - PEER-REVIEWED PUBLICATIONS (NON-PUBMED SEARCHABLE)

BOOK CHAPTERS


9. วิธีการแก้วสาร, สิทธิ์ คงธน, ปัญญา บุญนิล, รัชวีรยา ชัยภูมิ. รังสีวิทยาของการบาดเจ็บในข้อหัว. ใน รังสีวิทยาเวชศาสตร์ฉุกเฉิน โดย บุญนิล วิบูลย์ตำแหน่งรัชวีรยา ภาควิชาการแพทย์ศาสตร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี หน้า 449-482. สำนักพิมพ์ หน่วยวิชาการ, กรุงเทพ. 2552.

Acute abdominal pain continues to pose a diagnostic challenge to many emergency physicians. Possible etiologies are widely varied ranging from benign conditions to life-threatening illness, medical to surgical diseases. It accounts for 5-10% of emergency department visits. Nowadays, diagnostic imaging plays an important role in directing patients to appropriate disposition and even providing an accurate, timely diagnosis in many cases. With immediate availability of advanced imaging such as ultrasound (US), computed tomography (CT) and magnetic resonance (MR) imaging for emergency patients, these imaging tests have become an indispensable tool for emergency physicians. Emergency radiologists have been called to be a part of the emergency patient care team to help caring for these patients.

Surgical abdomen accounts for approximately 10% of all emergency patients presenting with acute abdominal pain. Many times, diagnosis of appendicitis, diverticulitis, bowel obstruction, tuboovarian abscess, intraabdominal collection and cholecystitis are straightforward on both clinical and imaging grounds. However, some patients may present with few cues (i.e., elderly individuals or immunocompromised patients) or atypical imaging appearance. In this talk, atypical presentation of common diseases and typical presentation of uncommon conditions will be illustrated. Pitfalls and factors contributing to the pitfalls in diagnosing acute abdominal disease on imaging will be discussed in details.
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[Education]
1. 1995.2: Graduate Seoul National University College of Medicine
2. 1995.2: M.D. certified, Seoul, Korea
4. 2007.2: Seoul National University, Ph.D., Seoul, Korea

[Professional Appointments]
1. 1995.3-1996.2: Rotating Intern, Seoul National University Hospital, Seoul, Korea
2. 1996.3-2000.2: Residency in Radiology, Seoul National University Hospital, Seoul, Korea
3. 2000.3-2003.4: Military Service (served as a Captain), Radiologist in the military Hospital
4. 2003.5-2004.2: Fellowship in Radiology, Seoul National University Hospital, Seoul, Korea
5. 2004.3-present: Assistant Professor in Radiology & Emergency Medicine, Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Korea
6. 2012.4-present: Associate Professor in Radiology & Emergency Medicine, Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Korea

[Other Professional Positions]
1. Since 2000: Member, Korean Radiological Society
2. Since 2003: Member, Koran Society of Interventional Radiology
3. Since 2005: Member, RSNA (Radiological Society of North America)
4. Since 2005: Member, ASER (American Society of Emergency Radiology)
5. Since 2006: Member, SIR (Society of Interventional Radiology)
6. Since 2010: Member, CIRSE (Cardiovascular and Interventional Radiological Society of Europe)


Interventional management of GI bleeding

Hwan Jun Jae, MD
Department of Radiology, Seoul National University Hospital,
Seoul, Korea

In 1972, Rosch et al introduced the technique of transcatheter arterial embolization (TAE) as an alternative to surgery for the control of upper gastrointestinal (GI) bleeding. Bookstein et al also performed TAE with an autologous clot to stop lower GI bleeding in 1974. Although TAE has been a widely accepted treatment modality for the management of upper GI bleeding, it has not achieved the same recognition for lower GI bleeding. The stomach and duodenum have a rich collateral blood supply that is generally sufficient to prevent ischemic complications of embolization. In contrast, the lower GI tract does not have a rich collateral supply. The potential risk of bowel infarction after TAE of lower GI bleeding is therefore expected to be greater. In the early lower GI embolization series, bowel infarction occurred at an unacceptably high frequency, as high as 20%–33%. The high rates of infarction in these early series were probably related to the relatively large-caliber catheters (usually 5–6.5 F) used and more limited embolic agents (autologous clot and gelatin sponges) available to the early investigators. With these limitations, it was unable to perform superselective embolization so that much larger vascular territories than necessary were often occluded. Therefore, from the mid 1970s through the early 1990s, TAE for lower GI bleeding was largely abandoned in favor of vasopressin infusion. Although vasopressin infusion was associated with a high initial control rate, it was not an ideal treatment option for lower GI bleeding, because of a high rebleeding rate (20%-50%) and cardiovascular complications including coronary vasoconstriction and arrhythmia.

However, there have been remarkable advances in the low-profile coaxial catheter system, embolic agents and digital angiographic equipment. With these, we can select small target vessels more easily without spasms and can embolize them more accurately. Recently, several papers reporting successful embolization at the vasa recta level have been published and superselective embolization has emerged as a practical treatment option even in the patients with lower GI bleeding.
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Education:
1981~1988  MD.:  China Medical University School of Medicine, Taichung, Taiwan
2006~2009  MSc.:  National Taipei University of Nursing and Health Sciences,
                     Graduate Institute of Health Allied Education, Taipei, Taiwan

Clinical Training:
1990~1994:  Residency, Departement of Radiology, Taipei Veterans General
            Hospital, Taipei, Taiwan
1994~1995:  Fellowship, Departement of Radiology, Taipei Veterans General
            Hospital, Taipei, Taiwan
1995~2011:  Attending, Departement of Radiology, Taipei Veterans General
            Hospital, Taipei, Taiwan
1999~2000:  Fellowship, Emergency and Trauma Radiology, R. Adams Cowley
            Shock Trauma Center & University of Maryland Medical Center,
            Baltimore, MD, USA.
2011~present: Chief, Department of Radiology, Taipei City Hospital Zhong Xiao
              Branch, Taipei, Taiwan

Fields of Interests:
1. Emergency and Trauma Radiology
2. Pediatric Radiology
3. Breast Imaging and Intervention
Ischemic Bowel Disease:

Imaging Diagnosis and Radiological Intervention

Jen-Dar Chen, MD.
Department of Radiology, Taipei City Hospital Zhong-Xiao Branch
Taipei, Taiwan (R.O.C.)

Introduction

Ischemic bowel disease (IBD) is an uncommon but fatal gastrointestinal disorder of acute abdomen. Intestinal hypoxia occurs due to both anatomic and functional impediments to either arterial inflow to or venous outflow from intestines, resulting in bowel necrosis. IBD is categorized into three types: arterio-occlusive (65%), veno-occlusive (5~15%) and non-occlusive (20%). If delayed or missed diagnosis, IBD often associated with high mortality rate (60~90%) due to enteric bacteria translocation, sepsis and hyperoxide radical-induced multi-system injury. Therefore early diagnosis is mandatory to improve survival and reduce morbidity before irreversible bowel damage, which occurs within 6-8 hours after the insult.

Imaging Diagnosis

Plain radiography provides limited diagnostic value for IBD due to low sensitivity and specificity. Angiography has been the reference standard imaging examination, but invasive & time-consuming. CT has expanded its diagnostic role in this setting by the advent of multidetector CT angiography (MDCTA) technology. MDCTA allows evaluating even distal vascular segments and depicting stenosis, atherosclerotic plaque, thrombus, perfusion status of bowels, and complex anatomic abnormalities in coronal, sagittal and multiplanar reformatted images and maximum intensity projection (MIP) by its rapid volumetric data acquisition and superb longitudinal spatial resolution. MDCTA in many cases has replaced conventional catheter angiography as a noninvasive imaging study for evaluation of the mesenteric vasculature and bowels. CT has been reported with high sensitivity of approximately 82~100% and specificity of 60~90% for diagnosing mesenteric ischemia. Appropriate scan parameters should be set up for mesenteric imaging in both arterial and portal venous phases (to be presented). The most common CT features of IBD include: bowel wall thickening, luminal dilatation, abnormal bowel wall attenuation, abnormal bowel enhancing pattern (lack enhancement, strong enhancement, delayed enhancement or target sign), mesenteric edema-infiltrates, mesenteric arterial or venous occlusions, pneumatosis intestinalis, portomesenteric gas, ascites
(bloody), associated other visceral infarcts. These images correlated with plain radiography and angiography will be shown and the interpretation key points will also be presented.

Endovascular Treatment

The goal of treatment of acute IBD is to reestablish blood flow as soon as possible, before irreversible bowel ischemia. The most common therapeutical approach is surgical revascularization (SMA embolectomy or visceral artery bypass) and resection of infarcted bowel in the setting of peritoneal signs. Even in the presence of irreversible bowel ischemia, perioperative medical treatment may reduce disease progression, enabling more limited bowel resection. (eg. rehydration, antibiotics)

Radiological intervention with endovascular (Intra-arterial) thrombolytics has been considered an alternative or adjunctive treatment modality to surgery in selected patients. The reported selection criteria include: symptoms shorter than 6 to 8 hours, absence of peritoneal signs at physical examination, absence of CT findings of bowel infarction, and only with partial occlusion or occlusion of secondary branches of SMA.

Intra-arterial thrombolytic treatment may help resolution of the arterial-occluding thrombus by direct infusion of thrombolytics (eg. Urokinase) into the thrombus via a microcatheter. If no lysis occurs at 4 hours or if appearance of peritoneal signs, laparotomy then should be taken. Limited studies in the literatures showed angiographic resolution of the thromboembolism about 90%, clinical success without requiring surgery in about 60~70%, and survival in 50~89%. Complications of local intra-arterial thrombolytic therapy for SMA embolism may occur such as extravasation, intramural bleeding and progression to bowel gangrene due to thrombolytic failure and delayed surgery. Sequential angiography may be repeated (4~6 hours) as appropriate depending on the clinical and radiological evolution. Relevant cases will be presented.

Conclusion:

MDCTA can replace conventional angiography in most cases as a noninvasive diagnostic imaging modality for IBD. Endovascular thrombolytic treatment of IBD may be an effective alternative or adjunctive treatment to surgical embolectomy in those patients in whom an early diagnosis can be made, without clinical and radiological evidence of irreversible bowel infarcts.
Endovascular therapy for visceral vascular disease

Hwan Jun Jae, MD
Department of Radiology, Seoul National University Hospital, Seoul, Korea

Acute mesenteric ischemia is usually caused by embolism resulting in bowel infarction characterized by a typical acute onset of diffuse abdominal pain with still high mortality rates of 70–90% despite immediate surgery or endovascular therapy. In contrast, symptomatic chronic mesenteric ischemia (CMI) is an uncommon, potentially under-diagnosed condition caused by fixed stenoses or occlusion of, in most conditions, at least two visceral arteries. Advanced stages of CMI disease with significant two- or three-vessel disease are associated with an increased cardiovascular and intestinal mortality and are thus an indication for revascularization. Duplex ultrasonography has become the primary screening method for CMI and CT angiography is also a good diagnostic tool. In patients anatomically suited for endovascular revascularization, percutaneous revascularization has replaced surgical revascularization as the first-line therapeutic strategy, even if patency rates are in favor of surgical revascularization.

Spontaneous dissection of the superior mesenteric artery (SMA) not associated with aortic dissection is very rare. The pathogenesis and natural history are unknown because of its scarcity of reported cases. Recently, with the advances in diagnostic imaging such as CT angiography and ultrasonography, the chances to detect this pathology have been increasing. They have been underestimated due to the rarity of methods to confirm the diagnosis in the pre-CT era, and misdiagnosed as a SMA thrombosis in the pre-MDCT era. There is no consensus on the best mode of treatment. Spontaneous SMA dissection has been known to carry a high mortality rate and it has mostly been treated with surgery in the past. However, recent reports demonstrated several cases with self-limited course and full recovery after conservative management. The endovascular techniques have been rapidly developed and percutaneous stenting became an available treatment option in this disease.

Although rare, aneurysms of the visceral arteries represent a clinically important disease entity. Nearly a quarter of visceral artery aneurysms (VAA) present as clinical emergencies, which have a fatal outcome in about 8.5% of these patients. The
clinical symptoms, natural history, and mortality of VAA vary depending on the vessels involved; the most common sites are the splenic, hepatic, superior mesenteric, gastroduodenal, and small pancreatic arteries. Before the evolution of sophisticated embolotherapy techniques, VAAs were treated surgically. Today, however, transcatheter embolization is a successful alternative treatment.
Abdominal trauma accounts for 10% of all trauma-related deaths and is a source of significant morbidity in trauma patients. Bedside ultrasound for evaluation of free fluid has become a routine in many trauma centers, whether the patients are stable or unstable. Focused assessment with sonography in trauma (FAST) has become an integral tool in the evaluation of patients to help detecting abdominal free fluid that may represent acute hemoperitoneum. Disposition based on clinical data (usually vital signs) and FAST results to either operating theaters or observation units are well known. FAST is a helpful but imperfect tool for screening purpose and its pitfalls will be discussed in this talk. Computed tomography (CT) is the current imaging standard for evaluation of most cases suspected of having significant blunt trauma with stable vitals because of its higher sensitivity and specificity than FAST. The role of CT is now even more critical owing to widespread trend of nonoperative management (NOM) of trauma patients. Detailed information from CT could help trauma surgeons deciding whether NOM would likely or unlikely to be successful in an individual patient. Greater than 50% of splenic injury, 80% of hepatic injury and almost all renal injuries are now commonly managed with NOM. Despite CT integral importance to diagnosis of abdominal trauma, it is not without a flaw. Pitfalls in diagnosis of solid/hollow visceral injuries, hemoperitoneum, vascular injuries and mimics of abdominal trauma will be discussed and illustrated in this talk.
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EDUCATION:
October, 1981 - June, 1988
School of Medicine, Medical College, National Taiwan University

RESIDENCIES:
July, 1988 - June, 1992
Resident, Department of Radiology
Poh Ai Hospital (Lotung, I-Lan) and
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ACADEMIC APPOINTMENT:
Chang Gung Memorial Hospital (Linkou)
Assistant Professor, Department of Radiology
July, 2002 – present
Associate Professor, Department of Radiology

Chang Gung University
June, 1999 – July, 2005
Lecturer, Department of Medical Technology
August, 2005 – present
Assistant Professor, Department of Medical Technology

EMPLOYMENT RECORD:
July, 1992 - August, 1994
Staff Radiologist, Department of Radiology
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August, 1992 - November, 1994
Visiting Staff in part-time, Department of Medical Imaging
National Taiwan University Hospital (Taipei)

September, 1994 - present
Staff Radiologist, Department of Radiology
Chang Gung Memorial Hospital (Linkou)

October, 2004 – August, 2005
Director of Second Division, Department of Radiology
Chang Gung Memorial Hospital (Linkou)

Director of Emergency and Critical Care Radiology
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October, 2011 – present
Chief
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BOARD CERTIFICATION:
October 19, 1992
The Radiological Society of ROC, Cert. No. 000297

LICENSURE:
December, 1988
Chinese License No. 017133

PROFESSIONAL AFFILIATIONS:
American Society of Emergency Radiology
European Society of Radiology
The Radiological Society of ROC
The Neuroradiological Society of ROC
The Society of Ultrasound in Medicine of ROC
Formosan Medical Association
RESEARCH INTEREST:
Trauma radiology
Emergency radiology

BIBLIOGRAPHY

Publications related to emergency and trauma radiology in recent five years:
[NSC-95-2314-B-182A-198]
8. Wu CH, Chen CC, Wang CJ, Wong YC (correspondence author), Wang LJ, Huang CC, Lo WC, Chen HW. Discrimination of gangrenous from
uncomplicated acute cholecystitis: accuracy of CT findings. *Abdominal Imaging* 2011; 36:174-178


19. Huang CC, **Wong YC**, Wang LJ, Chiu TF, Ng CJ, Chen JC. Decreased renal parenchymal density on unenhanced helical computed tomography for


**HONORS & AWARDS:**

1. 1997 Giovanni DiChiro Award for Outstanding Scientific Research published in the Journal of Computer Assisted Tomography (First Author)

2. 2007 Poster Award at the 56th Annual Conference of The Radiological Society of the ROC (Co-author)

3. Award for Outstanding Scientific Paper published in the 2007 Chinese Journal of Radiology (Corresponding author)

4. Award for Outstanding Scientific Paper published in the 2008 Chinese Journal of Radiology (Corresponding author)

5. Award for Outstanding Scientific Paper published in the 2010 Chinese Journal of Radiology (Corresponding author)


7. 2011 Award for Outstanding Clinical Teaching in Chang Gung Memorial Hospital
TAE of major pelvic fractures and splenic injuries

Yon-Cheong Wong, MD.
Chang Gung Memorial Hospital
Emergency and Critical Care Radiology,
Department of Medical Imaging and Intervention
Taipei, Taiwan (R.O.C.)

Retroperitoneal hemorrhage in most patients of pelvic injuries is the result of venous bleeding or bone surface bleeding. Arterial bleeding is the major source of retroperitoneal hemorrhage in about 6% to 18% of the patients. The mortality rate of this patient group can be high if treatments are inadequate. Embolization has been proven as an effective treatment to arrest the arterial bleed and improve the survival rate. The indications for pelvic angiography and embolization include (1) Pelvic ring disruption with hypotension and without non-pelvic hemorrhage, (2) pelvic area contrast medium extravasation on CT scans. Rapidity, prevention of back bleeding, and preservation of pelvic organs are to be taken into consideration when performing pelvic embolization. We follow a strict protocol of using gelfoam for the embolization of bilateral internal iliac arteries. The immediate angiographic success is about 100%. However, about 19% require a repeat TAE. Post-TAE complications such as tissue necrosis are rare if superselective embolization and liquid embolizer are avoided. Despite the aggressive intervention, the mortality rate can still remain as high as 20% in the group of major pelvic injuries.

Spleen laceration is the most common injury in patients of blunt abdominal trauma. The hemodynamically unstable patients are rushed to the operating room for emergent splenectomy or splenorrhaphy. However, non-operating management has been the choice management for stable patients who are responsive to fluid resuscitation. Failures in non-operative management may occur if the response to resuscitation is transient or if CT examination reveals perisplenic contrast medium extravasation. Spleen embolization in this group of patients can improve the salvage rate of non-operative management. Proximal embolization at the main artery with metallic coils deployment has been practiced and proven adequate in most of the cases. Nevertheless, repeat splenic hemorrhage has been reported to have occurred in some patients because of rich collateral circulations. A combination of distal embolization at the branch artery and proximal embolization at the main artery can improve the success rate. Post-TAE splenic infarct or splenic abscess is usually small and non-significant if gelfoam is avoided. Mortality related to a delayed splenic rupture after a successful embolization is infrequent.
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<td>2006</td>
<td>Yang F.S. et al.</td>
<td>Use of Cyanoacrylate Glue for sclerosis of a recurrent symptomatic hepatic cyst JVIR 17(2) 401-402</td>
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Transcatheter arterial embolization in acute renal bleeding

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Acute massive renal bleeding is an emergency and must be immediately treated to stop bleeding. The causes of acute massive renal bleeding are abdominal trauma, ruptured renal tumor, renal biopsy, percutaneous nephrostomy, congenital or acquired vascular anomalies (such as renal arterial aneurysm, arteriovenous malformation arteriovenous fistula) and complications of catheterization of renal artery.

Whole abdominal CT scan with dynamic IV contrast enhancement is most important and accurate in diagnosis about acute massive renal or peri-renal bleeding. Detailed and complete evaluation of angiographic mapping is very important to find the active bleeder, abnormal vessel and extravasation of contrast medium for superselective arterial embolization and diminished renal damage. An interventional radiologist must be familiar with renal vascular anatomy for more rapid and effective therapeutic arterial embolization. In the situation of massive internal bleeding and shock stage, the active bleeder (vessel) will be contracted and resulted easily embolized by the small embolizer. The embolized active bleeder may be open and rebleeding occurred after shock stage if the contracted embolized vessel turns into a normal large caliber. We must be more careful in therapeutic embolization for hypovolemic shock patient.

Conclusion: Transcatheter arterial embolization (TAE) provides a rapid, effective therapy with the least renal damage in acute massive renal bleeding. TAE is first choice for acute renal and perirenal bleeding.
急性大量腎臟出血的病因有腹部外傷、腎臟腫瘤破裂出血、診斷性腎組織切片檢查或診療性經皮穿腎造口術術後出血、先天性或後天性血管異常類如腎動脈瘤破裂、動靜脈畸形破裂或動靜脈瘻管破裂出血及各種血管攝影檢查對腎動脈的傷害出血。

動態性靜脈注射對比劑電斷層掃描是診斷腎臟及腎臟週圍出血的最佳診斷工具。血管攝影檢查是經導管動脈栓塞術必要項目。仔細血管攝影評估注意細微血管變化找出出血的腎動脈分支有助於超選擇性腎動脈栓塞術減少腎臟傷害。了解腎動脈解剖及其分支狀況可增加經導管動脈栓塞術的成功率。在急性出血時常導致血管收縮管腔變小容易經使用金屬彈簧栓塞但栓塞後血管恢復正常大小時被阻塞的血管可能又被打開造成二次出血。

結論：無論是那一種原因的腎臟出血，經導管動脈栓塞術對治療急性腎臟出血都能提供快速有效的止血療效及最少的腎臟損害。經導管動脈栓塞術是急性腎臟出血的最佳選擇。
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Emergent Percutaneous Biliary Intervention

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Percutaneous cholecystostomy is an effective and safe procedure for timely decompression of the inflamed gallbladder in acute cholecystitis, especially in those patients who are at high-risk for surgery. In acute cholangitis, both endoscopic and percutaneous approach are effective for biliary drainage. The Tokyo Guidelines for diagnosis and treatment of acute cholecystitis and acute cholangitis appear to be a promising reference. However, in those patients with moderate to severe acute cholecystitis, the treatment of choice and the timing for biliary intervention or surgery remain controversial in the literature. Whether urgent or emergent percutaneous biliary intervention is performed depends on local expertise and the availability of different services after multidisciplinary decision-making.