New Clinical Sessions

Union Healthcheck Centre				
Booking & Enquiry: 2682 2313	Time Schedule			
Counseling Psychology Ms. Lo Heiki	Wed 13:00-17:00 (By Appointment)			
Paediatirc Immunology, Allergy & Infectious Diseases Dr. Chua Gilbert T.	Tue 14:00-17:00 Thu 14:00-17:00 Sat 09:30-13:00			
Minimally Invasive Centre				
Booking & Enguiny: 2608 3383	Time Schedule			

Booking & Enquiry: 2608 3383	Time Schedule	
Gastroenterology & Hepatology Dr. Fan Tam Ting, Tina	Thu Fri Sat	10:00-13:00 15:00-18:00 15:00-18:00 10:00-13:00
Clinical Psychology Dr. Wong Adrian	Wed	10:00-18:00

CME **Exoskeleton Robotics for** Neuro Rehabilitation Programme

Date: 15 September 2023 (Fridav)

Time:

2:00pm-3:00pm (Lecture and Robotic Devices Demonstration)

Venue: 8/F MIC, Union Hospital or Zoom

Speaker: **Prof Raymond Tong**

Department of Biomedical Engineering The Chinese University of Hong Kong

Chairman:

Dr Yannie O.Y. Soo Assistant Chief Hospital Manager Union Hospital





On-site Registration Lunch will be served at 1:30pm



Zoom Registration



Union Hospital Polyclinic (Tsim Sha Tsui)			
Booking & Enquiry: 2375 3323	2375 3323 Time Schedule		
Gastroenterology & Hepatology Dr. Fan Tam Ting, Tina	Tue Fri	11:00-13:00 15:00-18:00 10:00-13:00	
Orthopaedics & Traumatology Dr. Ng Yuet Sun	Mon Thu Fri	10:00-13:00 10:00-13:00 15:00-18:00 10:00-13:00	
Cardiology Dr.Chan Chi Yuen, Karl	Mon	10:00-11:00	
Specialty Clinic - Paediatric Endocrinology			

Booking & Enquiry: 2608 3366		Time Schedule
Dr. But Wai Man, Betty	Fri	15:00-18:00

Regular Meeting

Meeting : Clinical Pathologic Conference

Date : Time :	13 September 2023 (Wednesday) 8:30 a.m. – 9:30 a.m.	
Co-ordinator:	Dr. FUNG Ming Kit, Terence Deputy Head, Department of Surgery Union Hospital	
	Dr. LUI Chi Wai, Philip Consultant in Pathology Union Hospital	
Venue:	Training Room, 8/F MIC Hospital Building, Union Hospital	
Booking & Enquiry:	2608 3151 (Quality Assurance and Training Dept)	

Post-Event Highlights



ft) Dr. Stephen Foo Clara Wu, Dr. Louisa Lui Dr. Anthony Lee, Dr. Terence Fund

Dr Louisa Lui was invited to deliver a talk on "Updates on Management of Colorectal Cancer" on 21 July 2023. The Lecture was chaired by Dr. Terence Fund and received great response from the participants.

UNION connection **VOL 205**

August 2023

Dear Colleagues,

Union Hospital had just completed an Organization Wide Survey (OWS) by auditors/surveyors from the Australian Council on Healthcare Standards (International) which took one whole week from 10 July 2023 to 14 July 2023. The two lead surveyors were from Australia who participated in the audit in virtual fashion by "Zoom". We arranged for two "buddies" who would take them where they would like to see and verify for themselves with a mobile cart of audio-visual equipment. There were three seasoned local surveyors and they were respectively Dr Loretta Yam, a respiratory disease expert, Mr Michael Ling, a very respectable pharmacist and Ms Queenie Chan, an experienced infection control nurse cum quality assurance officer of another private hospital on the island side. Since this survey was being conducted in a format new to ACHS, i.e., a three year cycle instead of the four year one previously and according to a new edition of standards and criteria, the EQuIP 7, we had been preparing for it in the past few months. Thanks to the great effort of Dr Joseph Ho and his team in our Quality Assurance Department, this "accreditation week" just went by successfully without any hiccups!

On looking back I must hand out a big "LIKE" to ACHS for the remarkable changes in EQuIP 7, the most impressive of which is doing away with writing to document findings and recommendations. All these are being delivered verbally and may be settled with improvement made then and there when minor. With important issues of serious nature which will take time and effort to deal with, these will be left behind and improvement measures will become subjects for discussion at the next "Focal Check Point" session about one year later. There are two such sessions of accreditation activity within the same cycle. Thus you can see that the long and tedious work of writing up reports by the surveyors had been gladly disposed of! This is very much welcomed by all parties concerned, i.e., surveyors and surveyees. I am also pleased to report that all the verbal comments by the surveyors, both overseas and local alike, were positive and encouraging with lots of commendations.

I must ascribe our success in this round of accreditation to two factors which have been firmly ingrained in the minds of our staff. Firstly, the hospital culture of "open disclosure" had been established since 1999 when we first achieved hospital-wide ISO accreditation. Secondly the Quality Management System as dictated by ISO standard and procedure guide-lines together with regular cross-departmental internal auditing activities will ensure that different grades and levels of our staff are well aware of their duties and responsibilities and then execute them accordingly with due diligence. Thus we are always preparing to be examined and scrutinized by third parties and it is this "preparedness" which enables us to deal with this week of auditing by ACHS surveyors as just another working week with no undue hardship or extra effort!

Cheerio,

Dr Anthony KY Lee Chief Hospital Manager & Medical Director

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Message from the Chief Hospital Manager

Sharing Corner

Snake Bite Envenomation and Management



Introduction and Epidemiology

Venomous snake bite is a global drastic health care burden. According to WHO, there are more than 2.7 million snake envenoming with around 100,000 mortalities each year, mostly in Africa, Asia and Latin America.¹ In Hong Kong, this is also not uncommon, however, the incidence is getting sparse due to the decline in agricultural activities. Local study showed that there were more than 300 cases annually before 1997², and now dropped to fewer than 70 cases per year reported in recent years.³

Dr Chang Wai Yin

Union Hospital

Prevention, prompt prehospital management and recognition of toxidrome is the key for reducing morbidity. With the advance and new technology in manufacturing antivenom and the increasing familiarity of its usage, morbidity and mortality for venous snake bite in Hong Kong is extremely rare.

Venomous Snake and Toxidrome

From Agriculture, Fisheries and Conservative Department data, there are around 50 species of different snakes in Hong Kong. Luckily there are only 14 venomous LAND snake species and only 8 of them can be fatal if not treated timely. For sea snake, mostly are venomous but it rarely attacks human.

Among these venomous reptiles, Bamboo snake 青竹蛇 (Fig 1), or its scientific name Trimeresurus albolabris, under the Family Viperidae, is the most common offender for venomous bite in Hong Kong. Local epidemiological study revealed that bamboo snake account for more than 95% of all venomous snake bite, but no fatalities recorded (#). Other well known, and even more deadly serpent, under the Family Elapidae, include King Cobra 眼鏡王蛇/過山烏 (Fig 2), Chinese Cobra 中華眼鏡蛇/飯鏟頭 (Fig3),







Figure 2. 眼鏡王蛇 / 過山烏



Figure 3. 中華眼鏡蛇 / 飯鏟頭

Krait 銀腳帶 / 金腳帶 (Fig4) and the Family Colubridae: Red necked Keelback 紅脖游蛇 (Fig 5). Besides, apart from these snakes which can be found in HK countryside, some exotic species can be found in snake shop for culinary delicacy or being raised/reared by individuals, e.g Russell Viper 鎖鏈蛇 (Fig 6) which is one of the commonest snakes in India.

To correctly diagnose whether the bite is venomous or not, physicians sometimes have to recognize certain characteristics of the snakes and clinical toxidrome they exerted.

There is no straightforward method or rule to identify a venomous snake as even a few non-venomous snakes have evolved to look alike their venomous counterparts. But in general, snake head, pupil shape, fang mark, scale pattern and some special behaviors are features used for identification. For example, the head shape of venomous snakes are mostly triangular in sharp because the venom gland is situated at the side of the jaw. (Fig 7)



Figure 7. Image credit: snakesox.com







Figure 5. 紅脖游蛇



Figure 6. 鎖鏈蛇

Clinical Features

Next is the clinical symptom of envenomation, the toxidrome.

Several toxidromes are commonly recognized for local snake species, including 1. cytotoxicity (local tissue damage, presenting as severe pain and swelling or even rhadomyolysis), 2. hemotoxic (coagulopathy), 3. neurotoxic and 4. cardiotoxic.

These clinical manifestations, of course, depend on the venom injected, which consist of a complex mixture of toxin. Thus, one snake can sometimes induce more than one toxidrome. But in general, commonly encountered snakes in Hong Kong exert their venom effect as shown in Table 1.

Table 1. Envenomation syndrome of selective native land snakes

	Local envenomation	Coagulopathy	Systemic neurotoxicity
Bamboo snake	Moderate to severe	Yes	No
Chinese Cobra	severe	No	No
Many branded Krait	Mild / nil	No	Yes
Red-neck Keelback	mild	Yes	No

Fortunately, around 20% of snake bites injury are non-venomous, ie dry bite

Prehospital management

If a victim is bitten by a snake, the rule of thumb is to stay calm and leave the territory immediately, but not over exertion especially in case of lower limb bites which may increase the venom absorption rate. The injured limbs should be immobilized and placed below heart level if possible, and a loose pressure bandage be applied to restrict the lymphatic flow if a neurotoxic snake bite is suspected. Under safe circumstances, try to identify the snake by taking a photo with electronic device. Then transfer the victim to hospital as soon as possible.

Some practices must be avoided. We should try not to suck out the venom by bare mouth or by incision. Also, try not to handle a snake corpse by bare hand as the bite reflex may still be intact even if the snake is dead. Besides, never apply a tight tourniquet which may jeopardize the arterial blood flow and also increase the chance of local damage by the cytotoxic venom.

In-hospital management

On arrival at hospital, immediate evaluation and resuscitation should be commenced on airway, breathing and circulation especially in case of neurotoxic envenomation (by cobra or krait). Then emergency physicians need to get detail history of the injury, including any first aid taken, development of symptoms and signs and any feature for snake identification, with care physical examination to identify possible toxidrome.

Patients have to be attached to cardiac monitor and IV access with baseline blood test taken, including complete blood count, liver and renal function test, clotting profile, muscle enzyme, and others investigation such as urinalysis, ECG and Chest X-ray if necessary. Subsequently, clinical symptoms and certain blood tests have to be reviewed and repeated at regular intervals for an initial 24-48 hours.

Other general management including wound dressing, anti-tetanus injection, adequate analgesia and antibiotics if necessary. Any patients exhibited any toxidrome highly suggestive of envenomation, correspondent antivenom has to be given as soon as possible.

As aforementioned, around 20% of snake bite injuries are non-venomous. But these patients still need to be observed for at least 12 hours paired with blood test to clear any possible toxidrome.

Antivenom

Antivenom is the mainstay of treatment in snake bite envenomation although there is only limited evidence or randomized controlled studies and only based to local trials. It is indicated for progressive and severe local swelling or evidence of systemic envenomation and to has be given as soon as possible. If in doubt or not familiar with the use of antivenom, **Hong Kong Poison Information Centre** can be consulted for advice and guidance.

Most antivenom are immunoglobulin derived and extracted from animal serum, e.g horse. It can be monovalent, targeted only one snake species, or polyvalent which is developed against a number of snake species in the same geographic area. Local studies showed that it is well tolerated compared to products 20 years ago. Previously skin test was required before the treatment but it is now not necessary. However, chance of allergic reaction is still possible. Pre-treatment with antihistamine and steroid can be administered if in doubt.

Available antivenom is stocked in HA pharmacy and as shown in Table 2. Repeated dose may be needed depending on the clinical condition and response to previous administration.

Possible side effect can occur including early allergic reaction (minutes to 3 hours), such as itchiness with skin rash to anaphylaxis, or late reaction (1-12 days) like serum sickness presenting as fever, joint point, renal involvement or even encephalopathy.

Table 2. Snake Antivenom stocked in HA pharmacy under 3 Tiers. Level III antidote only available in Headquarter pharmacy.

	Name	HA anitdote list	Starting Dose*	For envenomation of:
1	Green Pit Viper (Thailand)	Level II	3 vials	Bamboo snake 青竹蛇
2	Antivenin of B. multicinctus and N. naja atra (Taiwan) 抗雨傘節及飯匙倩蛇毒血清	Level II	1 vial	Chinese Cobra 飯鏟頭 Many Banded Krait 銀腳帶
3	Naja naja (atra) Antivenin (Shanghai) 抗眼鏡蛇毒血清	Level II	2 vials (2000 IU)	Chinese Cobra 飯鏟頭
4	Bungarus mulicincms Antivenin (Shanghai) 抗銀環蛇毒血清	Level II	1 vial (10000 U)	Many Banded Krait 銀腳帶
5	Banded krait (Thailand)	Level II	5 vials	Banded Krait 金腳帶
6	King cobra (Thailand)	Level III	5 vials	King Cobra 過山烏
7	Russel's Viper (Thailand)	Level III	3 vials	Russell's viper 鎖鍊蛇
8	Antivenin of Tr. Mucrosquamatus and Tr. Gramineus (Taiwan) 抗龜殼花及赤尾齡蛇毒血清	Level III	1 vial	Chinese Fabu 烙鐵頭、Taiwan bamboo snake 竹葉青 , and probably for Mountain Pit Viper 山烙鐵頭
9	Agkistrodon acutas Antivenin (Shanghai) 抗五步蛇毒血清	Level III	4 vials (8000 U)	Hundred Pacer 百步蛇 / 五步蛇
10	Sea Snake Antivenom (Australia)	Level III	1000 units	Sea snake
11	Cobra (Thailand) - limited stock available in some hospitals		10 vials	Chinese Cobra 飯鏟頭

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Sharing Corner

The role of radiology in acute lower gastrointestinal bleeding



Dr Chan Chik Xing Specialist in Radiology **Union Hospital**

Lower gastrointestinal bleeding (LGIB) is a frequent cause for admission. The bleeding will stop spontaneously in most of the situations unless there is underlying vascular cause such as diverticular bleeding or angiodysplasia. One third of the patients will rebleed once while half of them will bleed the third time. This condition carries a 4% mortality, which would be higher for elderly patients or those with comorbidities.

The initial management for lower gastrointestinal bleeding includes resuscitation and admission to dedicated unit under multidisciplinary approach. Timely correction of thrombocytopaenia or coagulopathy should be achieved. NSAIDs, antiplatelets or anticoagulants would need to be withheld if clinically appropriate. After initial management, maximum effort should be made to localize and treat the bleeder.

The sensitivity and specificity of CT angiogram (CTA) in detecting lower gastrointestinal bleeding can reach 85.2% and 92.1% respectively. For patients who can be examined within 4 hours of the last haematochezia or patients being haemodynamically unstable, the sensitivity can be even higher as these patients likely experiencing ongoing bleeding. The detectable rate of bleeding by CTA is at least 0.35 mL/min. In general, CTA for GI bleeding is performed as a threephase examination, including non-contrast, arterial and venous phase covering the entire abdomen and pelvis. Noncontrast imaging is incorporated to ensure that the pre-existing hyperdense ingested material within the bowel lumen can be differentiated from active contrast extravasation during the scan. Maximum intensity projection arterial phase and venous phase images in the sagittal and coronal planes are reformatted to increase conspicuity of haemorrhage and to delineate the vascular anatomy.

Urgent colonoscopy should be performed by expert endoscopist. However, the bowel preparation is frequently inadequate and will require the use of a cap and a water-jet scope. Endoscopic haemostasis can be achieved by injection of epinephrine, clipping, thermal coagulation, band ligation or haemostatic powders.

Interventional radiologist can offer endovascular treatment as an alternative treatment. The common indications include very brisk patients with ongoing bleeding not responding adequately to resuscitation or patients unlikely to tolerate bowel preparation and early colonoscopy. Literature reports a high technical success rate reaching up to 93% to 100%. Although there is no direct head-to-head trials or retrospective studies of embolization versus endoscopic therapy, some studies show endovascular treatment being safer than surgical intervention in the high-risk patient population and showing a lower 30-day mortality rate. However, the potential complication specific to endovascular treatment is bowel ischemia. Mild form presents as transient abdominal pain and asymptomatic stenosis in 10% of cases. Severe ischemic



Diverticular haemorrhage in a 77-year-old male: there is no hyperattenuating material within the bowel lumen on the non-contrast scan (a).



There is active extravasation of contrast (arrows) into the lumen of the ascending colon on the arterial phase image (b), which evolves in morphology at the portal venous phase (c).

complications requiring surgical treatment such as symptomatic ischemic stenosis, intestinal infarction only happen in 2% of cases. Other disadvantages include risk of rebleeding and contrast-induced nephropathic complications.

The procedure is usually done in a single-plane angiosuite. Diagnostic angiograms at superior mesenteric artery (SMA) and inferior mesenteric artery (IMA) will be performed first by using C1, S1 or SHK catheters. Subsequent superselective cannulation of the individual branch is made by microcatheter/ microguidewire set. There are many different types of microcatheters and microquidewires available in the market, the choice is usually based on the angiographic findings, achievable catheter position, vessel diameter, type of embolic agent to be used. The most frequent use of embolic agents includes coil or n-butyl cyanoacrylate (NBCA) glue.

Good embolization techniques are always emphasized to minimize the risk of complication. Microcatheter position should be as close to the bleeding site as possible because the bowel distal to the ligament of Treitz does not have a dual arterial supply. The aim of embolization is to reduce arterial perfusion pressure while maintaining adequate collateral blood flow to minimize the risk of bowel ischaemia. The optimal level of embolization for SMA bleeder (proximal colon bleeding) would be at vasa rectum; for IMA bleeder (distal colon bleeding) would be at marginal or terminal artery. If initial angiograms at SMA and IMA being negative, the internal iliac arteries and rectal arteries should be examined to identify alternative source of haemorrhage. Fine and dedicate handling of the microcatheter/ microguidewire set is a must to avoid vessel vasospasm, dissection and perforation.

Each embolic agent carries its own advantages and disadvantages. For coil, if embolization takes place too proximally may result in early rebleeding. It will also close the door for secondary intervention to the bleeding vessel. Since it is radioopaque, it can be visualized under direct fluoroscopy and allow surgeons to identify the diseased segment of bowel for resection if open surgery is considered. For NBCA glue, it is usually guicker to achieve haemostasis and able to occlude vessel beyond the most distal site of microcatheter advancement. NBCA glue can be injected through ultra-microcatheters which is not suitable for coil delivery. However, using NBCA glue is technically more challenging and requires a steeper

learning curve to avoid stripping off glue cast resulting in non-target embolization or adhering catheter to the target artery.

To conclude, CTA allows a higher chance of bleeder localization if performed within 4 hours of the last haematochezia or in patients being haemodynamically unstable. Endovascular treatment should be considered as an effective alternative treatment for unstable patients who cannot tolerate bowel preparation or after failure of therapeutic colonoscopy.



bleeder (e)

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Superselective catheterization demonstrates active contrast extravasation at the ascending colon (d) followed by microcoil embolization performed at the vasa recta level with successful occlusion of the

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