Chapter Connection

2nd Issue - April 2008

Chapter Connection **is a newsletter specially brought to you by the Chapter of General Surgeons under the purview of the College of Surgeons, Singapore. The Board of the Chapter of General Surgeons is well represented with members from different institutions and this would mean that you could find the latest happenings of the general surgery community of these institutions in this newsletter. This newsletter is published quarterly and will be distributed to the Members of the Chapter of General Surgeons. On the goodwill of the Chapter Board, this quarterly newsletter will also be distributed at no cost to the Trainees and Fellows of General Surgery in various public hospitals.**

Upcoming Chapter Events

2nd Annual General Meeting of the Chapter of General Surgeons

The Chapter of General Surgeons will be holding its 2nd Annual General Meeting on 7 May 2008 (Wed) at 6.00pm at Boardroom (Level 3), Gleneagles Hospital, 6A Napier Road, Singapore 258500. Light refreshments will be served at 5.30pm and complimentary car park coupons will be given upon request. All Chapter Members are encouraged to attend. The Notice of 2nd Annual General Meeting will be disseminated to Chapter Members when nearer the date.

1st Exit Examination Preparatory Course for Advanced Surgical Trainees in General Surgery

The Chapter Board has initiated to organise the 1st Exit Examination Preparatory Course to aid all Advanced Surgical Trainees (ASTs) to better prepare their exit exam in 2008. The preparatory course serves to provide supplementary knowledge and a mock-up platform for the ASTs to have a "feel" of the exit exam. The preparatory course is a 3 ½ day program which will be conducted from 25 to 28 June 2008 (Wed-Sat) in the Singapore General Hospital, National University Hospital and Tan Tock Seng Hospital consisting of lecture series, clinical case studies and VIVA session. Some of the topics to be covered are Breast, Endocrine, Vascular, Trauma, Upper Gastrointestinal Surgeries and more.

Further details such as detailed course schedule, registration period and fees will be announced when nearer the date. Details of this preparatory course can also be found at the College of Surgeons website at www.css.edu.sg under "CME Activities" – General Surgery by May 2008.

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New! Surgeons cum Trainees Night

In conjunction with the 1st Exit Examination Preparatory Course, the Chapter Board is delighted to organise a "Surgeons cum Trainees Night" as a social platform for interaction between the general surgeons and the ASTs, as well as for social networking of Chapter Members. Attendees can expect a sumptuous *Penang-styled buffet with red wine at the dinner. This social function will be held on Friday, 27 June 2008 and details will be announced concurrently with the information of the preparatory course. Do grab this networking opportunity to know your peers!

**Note: Menu to be served is pending confirmation and may change without prior notice.*

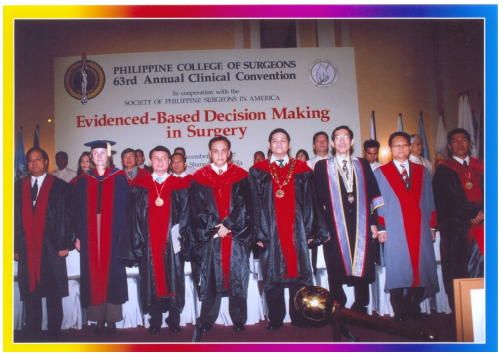
Travel News - *authored by A/Prof Chia Kok Hoong*

I was delighted to attend the 63rd Annual Clinical Congress of the Philippines College of Surgeons representing the College of Surgeons, Singapore, on behalf of the College President. The Congress opened on 2nd December 2007 with pomp and colour at the Edsa Shangri-La Hotel in Manila, Philippines.

We were accorded the prestige and honour together with Presidents and representatives from the American College of Surgeons, the College of Surgeons of Malaysia, the College of Surgeons of Hong Kong as well as the College of Philippine Surgeons in America. The programme is varied and interesting. I am reminded that Philippines consist of 7,500 islands and the practice of surgery is challenging especially in the remote outlying areas.

Attending the talks especially Dr Sanchez's talk on plastic surgery, I learnt how he utilised local regional anaesthetic blocks as well as a mobile operating theatre to deliver care to his countrymen. I learnt how ingenious and innovative the Philippine surgeons were in delivering high standard of care to their patients especially in the outlying areas. I have also experienced the warm and friendly hospitality of our host and met the President as well as the incoming President of the Philippine College of Surgeons.

Attending this conference, I learnt that we have come a long way and the many things that I have taken for granted, i.e. the availability of skilful and experienced colleagues and the easy availability of equipment and technology in Singapore with a well funded programme of healthcare is not present within our neighbouring countries. I am impressed and amazed that the Philippine College of Surgeons managed to make do with so little. I have heard that despite the pressures and temptations to venture overseas, the Fellows of the Philippine College of Surgeons had stayed to contribute to the well-being of their fellow Filipinos. I am reminded that we need to develop a closer collegiality with our neighbours and to return the hospitality that I have experienced in these few days in Manila.



Opening Ceremony of the 63rd Annual Clinical Congress at Isla Ballroom [*A/Prof Chia Kok Hoong is 2nd from the right*]

A Newsletter brought to you by the Chapter of General Surgeons, College of Surgeons, Singapore.

A Case of Salmonella Mycotic Aneurysm in a Patient with Systemic Lupus Erythematosus Treated Successfully with Endovascular Stenting

Co-Authored by: Terrence Huey, Alfred Kow and Chia Kok Hoong

Case Report

This was a 49 year-old lady with systemic lupus erythematosus (SLE) confined mainly to cutanoeus manifestation with no systemic organ involvement for 15 years. Her usual medications were sulphasalazine, prednisolone and hydroxychloroquine. She presented with lower abdominal pain for one week associated with fever. She was managed initially by the Rheumatologist for a urinary tract infection with intravenous antibiotics. Clinically her abdomen was soft, but tender in the suprapubic and paraumbilical region. Her white cell count was 9.2 $x10^9$ /L with a haemoglobin level of 11.3g/dL. Erythrocyte sedimentation rate was 55mm/H and complement 3 level was low at 0.51 g/L but complement 4 level was normal at 0.23 g/L. Subsequently, she developed hypotensive in the ward with a blood pressure of 90/70mmHg and a drop in Hb to 8g/dL. Computed tomography of the abdomen and pelvis (CTAP) was ordered to explore any possible intra-abdominal sepsis or lupus enteritis (see figure 1). Blood cultures were also taken.

CTAP revealed aortitis of the infrarenal abdominal aorta with saccular pseudoaneurysmal dilatation in the left lateral wall. The left adjacent psoas was also noted to be enlarged with irregular margins, suggestive of a leak from the pseudoaneurysm. Meanwhile her blood pressure had stabilised without inotropic support to 110/60 mmHg. Clinically she appeared alert and comfortable. Her abdomen was soft with no pulsatile mass. There was no bruising noted in the flanks and the distal circulation to her legs was intact with well-felt pedal pulses. Her blood investigations had not changed significantly and the blood cultures were positive for gram-negative rods. The vascular surgeon on duty was consulted urgently.

In view that the patient was haemodynamically stable after the hypotensive episode, and that she was bacteraemic, she was treated with broad-spectrum antibiotics to control the bacteraemia before intervention such as stenting or surgery were possible, knowing that risk of graft infection would be high in active bacteraemia. The possibility of emergency surgery should the aneurysm rupture was also conveyed to the patient. The patient was managed in the surgical high dependency unit and treated with a third generation cephalosporin and metronidazole. Her blood counts were also monitored regularly and remained stable with no further drop in Hb. The blood cultures yielded *Salmonella* group B, sensitive to ceftriaxone and ciprofloxacin.

She remained comfortable for the next few days. 2D-echocardiogram did not reveal any vegetations or abnormalities. Unfortunately, three days later, she complained of left-sided abdominal pain with declining urine output. The systolic blood pressure also fell from 120 to 92 mmHg. She was resuscitated with fluids and an emergency CT aortogram (see figure 2) showed that the left psoas haematoma was more pronounced with active extravasation of contrast and progression of the leak.

As we had cleared her circulation with systemic antibiotics for a few days, decision was made to perform emergency endovascular stenting by the vascular surgeon and interventional radiologist. Bilateral groins were cut down surgically to reveal the common femoral arteries. The aorta was noted to be hypoplastic and could only admit a 14mm aorto-uniiliac stent graft, which mandated the need to occlude the left common iliac artery with an occlusion device. The aortic stent graft (Medtronic) was deployed via the right common femoral artery just below the renal ostia and was landed within the right common iliac artery. The left common iliac artery was occluded with an occlusion device and the stent graft was moulded with a balloon catheter. The aneurysm was successfully excluded (see figure 3). Subsequently, a right to left femoral artery bypass was performed with a 6mm polytetrafluroethylene (PTFE) vascular graft to revascularise the left lower limb. There was no leak demonstrated and bilateral dorsalis pedis pulses were present at the end of the operation.

Post-operatively, the patient was continued on long term-antibiotics and converted to oral ciprofloxacin and bactrim according to culture sensitivities upon discharge, as advised by the Infectious Disease physician. Clinically, she had good post-operative recovery with early return to daily activities and diet. She was afebrile upon discharge and despite occasional febrile episodes, her blood cultures were negative. She is currently about 50 days post-stenting and is still on antibiotics and will likely need a prolonged course of antibiotics in view of emergency endovascular stenting in the background of unresolved bacteraemia. She was also maintained on corticosteroids throughout the episode to prevent a SLE flare.

Discussion

"Mycotic aneurysm" was first used by Osler to describe a "fresh fungal vegetations" appearance in 1885. Infective mycotic aortic aneurysms are uncommon and accounts for about 1 percent of aortic aneurysms[i], but carry a high mortality risk if ruptured. Commonly the pathogens responsible include *Staphylococcus aureus* and *Salmonella* species[ii].

Mycotic aneurysms usually arise from septic embolisation to the vasa vasorum, haematogenous seeding of an existing aneurysm, or extension from a contiguous site of infection. It has been described that patients with SLE on long-term steroids may be predisposed to aneurysms in view of accelerated atherosclerosis and primary aortic wall involvement[iii]. Moreover the use of immunosuppressive agents such as steroids predispose to infections. Most patients with aortitis due to Salmonella have pre-existing atherosclerotic disease at the site of subsequently infected aneurysm[iv], which is likely the case for our patient.

Patients with SLE are susceptible to infections, notably salmonellosis. About 3% of patient with SLE in a previously reported series had salmonellosis. *Samonella* infections in patients with SLE can even be fatal, especially in recurrent *Salmonella* infections, despite standard antimicrobial treatment[v]. The scope of salmonella infections in SLE included bacteremia, arthritis, osteomyelitis and rarer manifestations including pulmonary, vascular and urinary tract involvement.

In the management of aortitis due to Salmonella, early surgical intervention improves survival and is the treatment of choice[vi]. The possible mechanisms of the improved survival include control of haemorrhage in the event of rupture, prevention of rupture, as well as removal of the septic focus. Surgical management options include resection of the infected aorta, debridement of infected tissues, with extra-anatomic bypass or in-situ grafting and more recently via endovascular stenting of the offending aneurysm.

Endovascular stenting was performed in this lady achieving exclusion of the aneurysm and sealing off the leak, which is life saving. The procedure was significantly less invasive than an open procedure such as an aortic resection and debridement and has effectively dealt with the leaking mycotic aneurysm. This would also be ideal for a patient who may not be able to tolerate a prolonged highly invasive procedure. The limitation of this procedure was that it did not definitively remove the infective focus. Short-term outcome showed that this has been successful and she had remained afebrile with a downward C-reactive protein and WCC trend while being maintained on antibiotics.

Endovascular stenting for SLE related thoracic aneurysms had been described previously with successful follow up at 15 months[vii], and can be an invaluable alternative to conventional treatment. Case reports of endovascular repair of mycotic aneurysms have also been reported from Germany and Singapore. The former was a diabetic patient with mycotic aneurysm caused by *Salmonella enteritidis* with retroperitoneal abscess, successfully treated with endovascular stent-grafting and antibiotics for 6 months, with no evidence of further retroperitoneal inflammation on magnetic resonance imaging at 1 year. [viii] The latter was an immunocompromised patient who also had *Salmonella* mycotic aneurysm, treated by the author with endovascular stenting with a favourable outcome at 1 year.

Endovascular stenting in mycotic aneurysm is a fairly new procedure, but this can prove to be an invaluable tool to improve management of such patients. Long-term results are still pending.

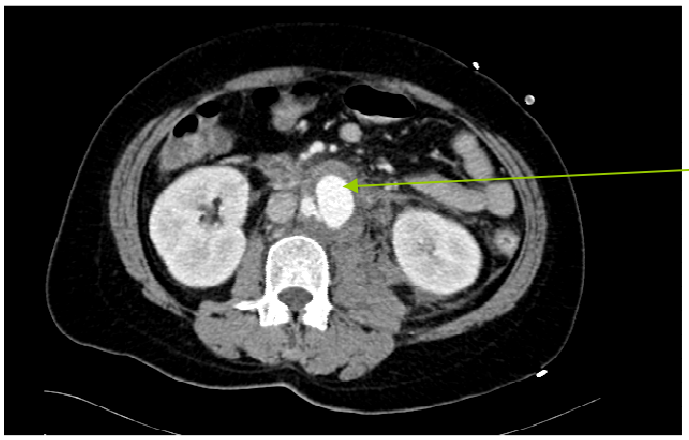


Figure 1: CTAP at presentation

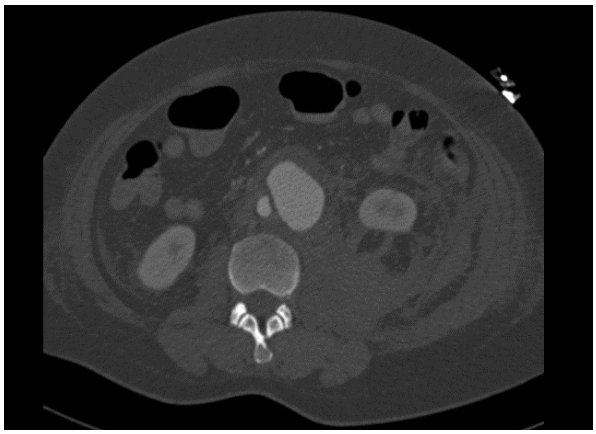


Figure 2: CT aortogram 3 days later

☺ *A Note of Thanks to A/Prof Chia Kok Hoong for contributing this case study.*
This article can also be read at the Chapter's eForum at www.css.edu.sg/Forum.

Contribution of any interesting news & articles from Chapter Members are welcome for consideration to publish in this quarterly newsletter. Please send it to the College Secretariat at css@ams.edu.sg.

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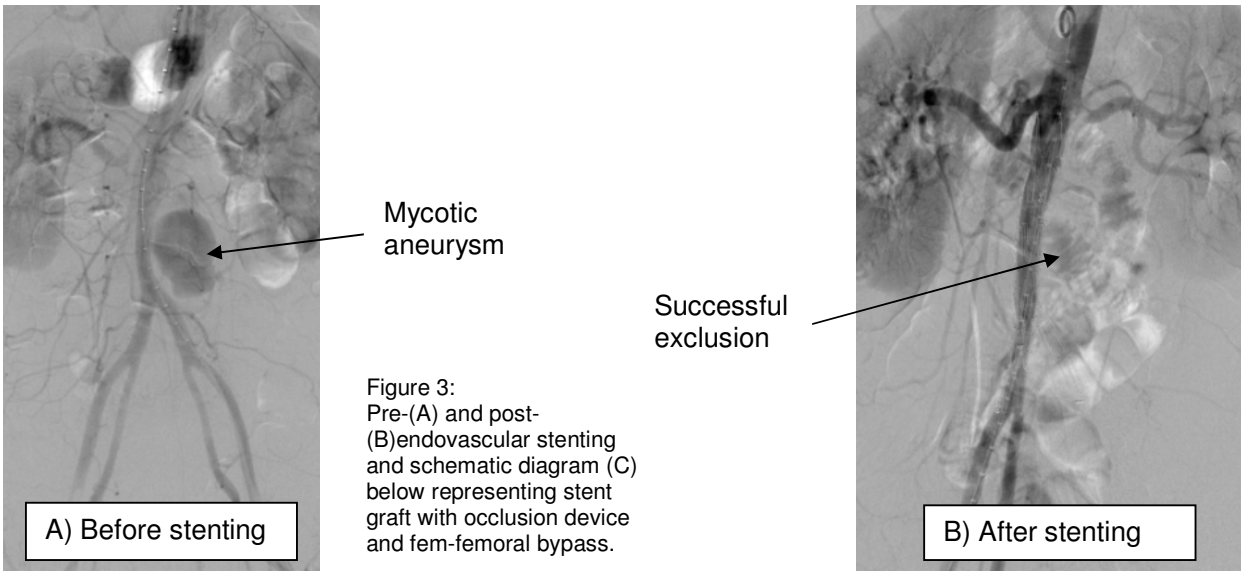
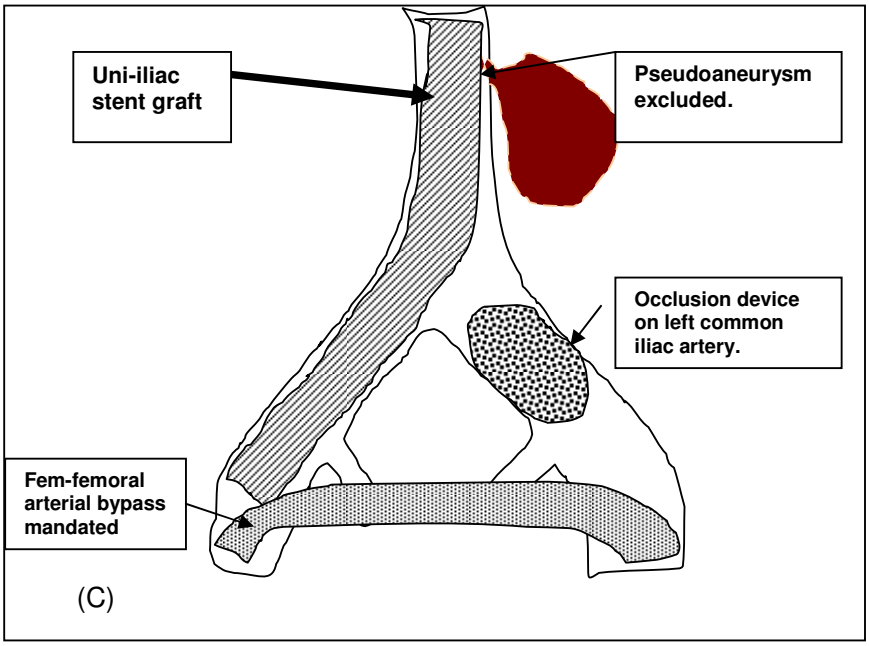


Figure 3:
Pre-(A) and post-(B)endovascular stenting and schematic diagram (C) below representing stent graft with occlusion device and fem-femoral bypass.



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