

CASE REPORTS

The clinical course of CPM is not invariably fatal. Asymptomatic cases and cases with clinical and radiological resolution have been documented. Magnetic resonance imaging is superior to computerized tomography in detecting CPM.

The rate of rise in the correction of hyponatraemia can theoretically be measured by calculating the deficit and correcting it over time by hypertonic saline. However,

in practice the corrected sodium level may be more difficult to predict. Hence, there is no substitute for more frequent estimation of serum sodium level in the management of hyponatraemic patients.

Acknowledgement

We thank Kamaruzzaman from UPP, UKM for the photographs.

References

1. Arefi AI, Llach F, Massry SG. Neurologic manifestation and morbidity of hyponatremia: correlation with brain water and electrolyte. *Medicine (Baltimore)* 1976;55 : 121-9.
2. Stein RH. Severe symptomatic hyponatraemia : Treatment and outcome. *Ann Intern Med* 1987;107 : 656-64.
3. Sterns RH, Riggs JE, Schochet SS. Osmotic demyelination syndrome following correction of hyponatraemia. *N Engl J Med* 1986;314 : 1535-42.

Clonorchiasis/Opisthorchiasis in Malaysians – Case Reports and Review

K Chandra Shekhar, PhD*

A R Nazarina, MPath**

S H Lee, FRCS***

R Pathmanathan, FRCPA**

* Department of Parasitology,

** Department of Pathology,

*** Department of Surgery

Faculty of Medicine,

University of Malaya, 59100 Kuala Lumpur

Summary

Clonorchiasis and opisthorchiasis are snail-transmitted trematode infections. The disease is endemic in many parts of Asia. Local case reports have been predominantly in Chinese with a history of travel to endemic countries. Thus far, 20 cases of liver fluke infestation have been reported in this country. This report presents another two cases of clonorchiasis and a case of opisthorchiasis. We also briefly review pertinent aspects of the disease.

Key Words: Liver fluke infestation, Clonorchiasis, Opisthorchiasis

Introduction

Liver fluke disease, caused by *Clonorchis sinensis*, *Opisthorchis viverrini* and *O. felinus* is endemic in parts of Asia and Europe. While *C. sinensis* is the important fluke infecting man in China, Japan, Korea and countries of Southeast Asia, *O. viverrini* more frequently occurs in man in Southeast Asia especially in the Mekong Valley area and northeast Thailand. The prevalence rate of opisthorchiasis ranges from between 3.5–50 million and the rate is increasing proportionately due to large number of immigrants or refugees migrating from endemic areas and the consumption of fish imported from endemic areas. Infection is acquired by consuming fresh water fish containing the infective metacercariae.

Whether either of these conditions is endemic in Malaysia is controversial. The first documented case of imported clonorchiasis was reported by Kuntz and Wells¹ in Sabah. Bisseru and Lim found 11 cases of opisthorchiasis in a survey of 97 medical students and 13 relatives². The authors showed that four cases were indigenous and the rest had acquired infection overseas. The same group of workers confirmed that the intermediate hosts for the parasite – the grass carp *Ctenopharyngodon idellus* (Cuvier and Valenciennes) and the snail vectors – are present locally. The local cases reported have been diagnosed from general and district hospitals and are based on either findings on stool examination or histopathology. The present report documents another two cases of clonorchiasis and one case of opisthorchiasis in Malaysians.

Case Presentations

Case 1

A 64-year-old male Chinese newspaper vendor from Seremban, Negeri Sembilan was referred by a GP³ to the University Hospital, Kuala Lumpur. He presented with a 3-week history of obstructive jaundice and right hypochondrial pain. Epidemiological investigations carried out revealed that he had been to Hong Kong, Singapore, Thailand and Europe and had consumed raw fish often in the company of friends. He had, however, not been abroad after 1983. He had complained of repeated attacks of fever for more than a month.

A CT scan done showed stones in the common bile duct. At cholecystectomy, two large stones were removed from the common bile duct. There was no obvious hepatomegaly and a percutaneous transhepatic cholangiogram revealed dilatation of intrahepatic bile ducts. Laboratory findings included a slight rise in serum bilirubin and abnormal liver function tests.

Grossly, the gall bladder appeared as a small cystic structure measuring 2.5 cm x 2.5 cm and the wall was 3 mm thick and fibrotic. Histological sections showed mucosal ulceration, thickening and fibrosis of the wall. The wall was infiltrated by acute and chronic inflammatory cells consisting of plasma cells and lymphocytes as well as polymorphs. Rokitansky Aschoff sinuses were present and dilated with inspissated bile. A pronounced granulomatous reaction to numerous parasitic ova was noted with numerous multinucleated giant cells (Figure 1). The ova were operculated and contained miracidia while some were engulfed by giant cells. The mean size of the ova measured 25 μ m x 17 μ m. Postoperatively, a single adult *Clonorchis sinensis* worm was isolated from the patient's draining T-tube. The adult worm measured 26mm by 5mm (Figure 2). Subsequent stool examination by the formal-ether technique confirmed ova of *Clonorchis sinensis* and cysts of *Entamoeba histolytica*. The identified fluke eggs measured 27–34 μ m x 12.5–19 μ m. The patient was treated with antibiotics, metronidazole (500 mg three times daily for 5 days) and praziquantel (3 x 25 mg/

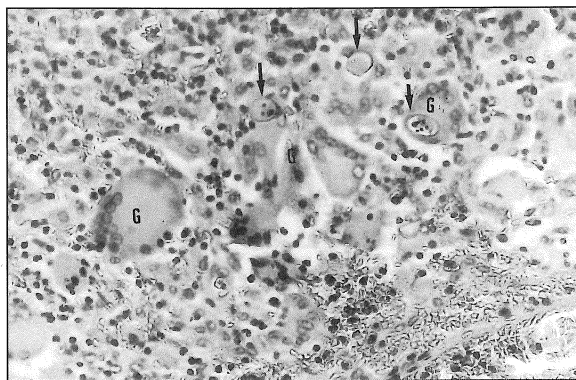


Fig. 1: Foreign body granuloma with numerous giant cells (G) some of which contain ova (arrow) x 200. H & E stain

kg body weight on each of 2 successive days). Stool examination a month later failed to reveal the presence of ova.

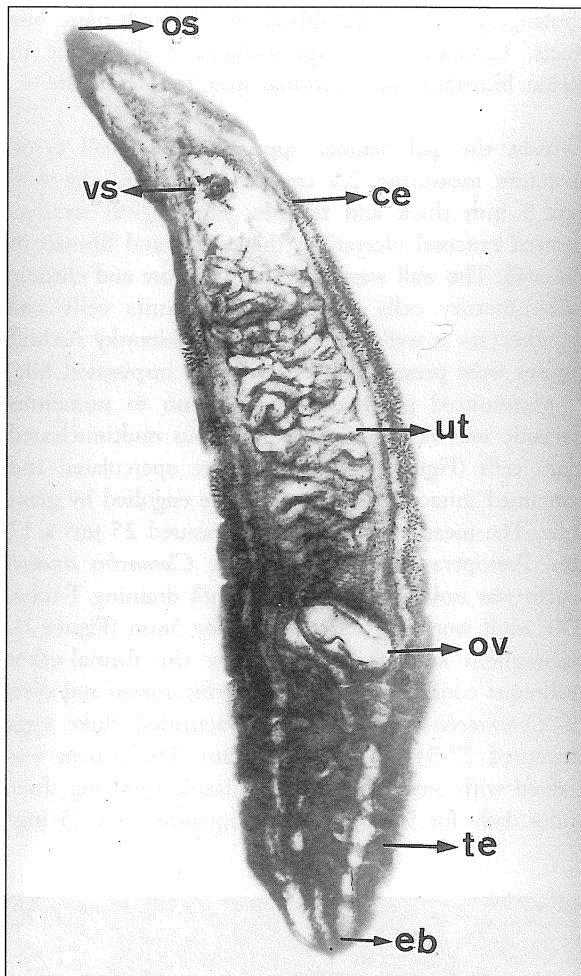


Fig. 2: Adult *Clonorchis sinensis* recovered from Case 1. x 100. [os = oral sucker; vs = ventral sucker; ce = cecum; ut = uterus; ov = ovary; te = testes; eb = excretory bladder]

Case 2

Coincidentally, a friend of Case 1 described above was admitted to the same surgical ward for suspected amoebiasis. He was a 54-year-old Chinese fish dealer who imports large quantities of fresh water fish from Thailand. He had complained of mild right upper quadrant pain, acholic stools, decreased appetite and

bouts of diarrhoea for two weeks. A physical examination was essentially negative. Stool examination was positive for *E. histolytica* cysts and numerous eggs of *C. sinensis*. Eggs were ovoid, flask shaped and measured from 26-35 μm x 12-21 μm . The shell was yellowish brown and had pronounced shoulders at the rim of the operculum. A spine was found at the broader opercular end of the egg. The patient admitted that he had travelled to Japan and Thailand and had on many occasions consumed raw fish dishes. The particular fish dish that he recollected eating in Thailand was mashed, raw fish seasoned with garlic, lemon juice, chillies and sauce, with glutinous rice and vegetables. The blood chemistry profile and liver function tests were essentially within normal limits. The patient refused a cholangiogram and studies to exclude pancreatitis and a gall bladder series were not carried. The patient was treated with metronidazole (500mg three times daily for 5 days) and praziquantel (20mg/kg body weight x 3 days) and discharged on the 6th hospital day.

Case 3

An asymptomatic 54-year-old female Chinese housewife had her stools analysed as part of a health clinic checkup. The stool was examined by the formol-ether sedimentation technique and numerous eggs measuring 22-32 μm x 11-21 μm were detected. The patient was a Malaysian and denied living anywhere except for a tour of Taiwan and Thailand during the last three months. She had stayed in Chiang Mai, Thailand for over a month. During the visits she had consumed raw fish delicacies on several occasions. On direct questioning, she did complain of mild epigastric pain unrelated to food and occasional intermittent fever. As the eggs were smaller than *Clonorchis* eggs and based on her travel history and endemicity of the disease in that region of Thailand, she probably was infected with *Opisthorchis viverrini*. She was treated with a similar dose of praziquantel. Two months later her stools were negative for eggs.

Discussion

Both *Clonorchis sinensis* and *Opisthorchis viverrini* have similar life cycles, and clinical and pathologic features. The parasitic trematodes are widely prevalent in many

parts of Asia and Europe. The mode of infestation is through the gastrointestinal tract. The clinical symptoms depend on the degree of infection and correlates with worm burden, frequency, duration of infection and the condition of the host.

These liver flukes predispose to biliary stasis and calculi formation. The calculi are usually darkly pigmented, soft, friable and irregular in shape and often found in the intrahepatic bile ducts. A parasite may act as a nidus for stone formation or provoke local inflammation in the bile ducts. In opisthorchiasis, the gall bladder is invariably parasitized in heavy infections and may contain hundreds of flukes.

Other complications of the infection include cholangitis (which may be acute suppurative or recurrent pyogenic), biliary calculi, acalculous cholecystitis, cholangiohepatitis, acute pancreatitis, choledocho-bronchial fistula and rarely obstruction of the common bile duct or pancreatic duct. The association of clonorchiasis and opisthorchiasis with cholangiocarcinoma is well established³. This association is supported by the fact that the tumour is more frequently seen in endemic than non-endemic areas and that liver fluke infections are more frequently seen in cases with than without cholangiocarcinoma. The cancer develops mostly in the second order intrahepatic bile ducts where the worms are situated.

The diagnosis of clonorchiasis and opisthorchiasis should be considered in the differential diagnosis in patients presenting with jaundice, hepatomegaly, enlarged gall bladder or obscure liver disease and with a history of travel to endemic countries. Diagnosis is made by identifying eggs in faeces or duodenal aspirates, which may occasionally be numerous. Although serological tests are available, these lack sensitivity and specificity. Sonography may detect the worm in the gall bladder or bile duct and show thickening of the intra-hepatic bile ducts.

In Malaysia, so far, 20 cases of liver fluke infections have been reported, out of which 9 cases (45%) were *Clonorchis sinensis* infections and 11 (55%) were cases of opisthorchiasis. The present report adds three other cases to this list. All the cases of clonorchiasis were

imported i.e. patients acquired the infection while travelling abroad. It is also interesting to note that all the 23 cases of clonorchiasis and opisthorchiasis reported in this country were restricted to the people of Chinese origin, and this is accounted for by the predilection of Chinese for raw fish.

Of the 12 opisthorchiasis cases described initially by Bisseru *et al*², 4 were considered indigenous as the affected individuals claimed never to have left Malaysia. The fact that the fish and snail intermediate hosts are found in Malaysia might seem to support this notion. However, one cannot dismiss the fact that of the many field surveys conducted in Malaysia, using detection methods that would almost certainly have detected these eggs, none has yielded *Opisthorchis* or *Clonorchis* eggs in the general population⁴. Additionally, if these diseases were truly endemic, since the initial reporting of cases in the late 60s, the incidence of the disease would be expected to increase, a trend that has not developed. Malaysia imports large quantities of fresh water fish from Thailand and Taiwan, where the infection is endemic, and this is a potential source of infection in some of these so-called "endemic" cases.

The drug of choice for the treatment of liver fluke infection is praziquantel. This drug has been found to act by increasing the permeability of the plasma membrane of susceptible worms to calcium ions, with loss of intracellular calcium and paralysis of the musculature. A curative dose suggested is 75mg/kg/day in three divided doses. Side effects include mild transient dizziness, headache, myalgia, nausea, abdominal discomfort and diarrhoea.

In conclusion, physicians and surgeons working in our hospitals should be aware of hepatobiliary diseases associated with liver fluke infections. They should know the clinical manifestations so that a proper diagnosis and therapy can be instituted.

If liver fluke is suspected and time permits, multiple stool specimens should be examined for the presence of parasites. Once identified, praziquantel should be instituted. Frequently, the need for surgery to control sepsis associated with cholangitis is warranted and treatment of infestation must be delayed until after surgery.

References

1. Kuntz RE & Wells WH. Intestinal parasites of man in British North Borneo. *Amer J Trop Med & Hyg* 1962;11 : 773-80.
2. Bisseru B & Lim KC. *Opisthorchis viverrini* (Poirier,1886) a trematode parasite of man in West Malaysia. *Trop Geog Med* 1969;21 : 138.
3. Flavell DJ. Liver fluke infection as an aetiological factor in bile duct carcinoma of man. *Trans Roy Soc Trop Med Hyg* 1981;75 : 815-23.
4. Kian Joe L. Prevalence of intestinal helminths among patients of the General Hospital in Kuala Lumpur, Malaya. *Trop Geogr Med* 1964;16 : 229.

Moyamoya Disease in Malaysia : Two Documented Cases

W K Ng, MRCP*

C T Tan, FRCP*

J George, FRCR**

M K Lee, MRCP***

T G Loh, FRCP****

* *Division of Neurology, Department of Medicine,
University Hospital, 59100 Kuala Lumpur*

** *Department of Radiology, University Hospital, 59100 Kuala Lumpur*

*** *Pantai Medical Centre, 59100 Kuala Lumpur*

**** *Subang Jaya Medical Centre, 59100 Petaling Jaya, Selangor*

Summary

Moyamoya disease is a rare cause of young strokes. The definitive diagnosis of moyamoya disease is made by cerebral angiography. We report two cases of moyamoya disease in Malaysia

Key Words: Moyamoya disease

Introduction

Moyamoya disease (MD) was first described by Takenchi and Shimazu in Japan in 1957. The word moyamoya is a Japanese adjective for a "puff of smoke"¹. MD is a condition of unknown etiology characterised by typical angiographic findings. Initially, this condition was believed to be peculiar to Japan but now has been reported worldwide. We describe two cases of MD presenting as recurrent cerebrovascular accidents in adolescent

Chinese males and review the epidemiology of MD in East Asia.

Case Report

Case 1

A 13-year-old Chinese boy presented with expressive dysphasia and inability to recognise his family members. He was born at term after an eventful pregnancy. At one month of age he had generalized