

# DIPHYLLOBOTHRIASIS: THE FIRST CASE REPORT FROM MALAYSIA

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**Abstract.** Diphyllobothriasis is a disease caused by infection with adult tapeworms of the genus *Diphyllobothrium*. Humans acquire the infection by consuming the raw or inadequately cooked flesh, roe, liver, or other organs of infected fish. *Diphyllobothrium latum* infection has not been reported in Malaysia; we are reporting the first case. The patient was a 62 year old Chinese male seen at the outpatient clinic with complaints of watery stools and slight abdominal discomfort for four days. Physical examination was normal. He was treated for diarrhea. Two days after treatment, he passed out intact off-white proglottids in his stool. Diphyllobothriasis was confirmed by examination of these gravid proglottids; typical operculated eggs were seen after rupturing the gravid proglottids. The patient had a history of eating *sashimi* (Japanese raw fish). He was treated with a single dose of praziquantel and had been well since.

## INTRODUCTION

Diphyllobothriasis is caused by infections with adult tapeworms of the genus *Diphyllobothrium*. Many *Diphyllobothrium* species have been incriminated as agents of human infection. It is estimated that nine million people are infected worldwide (Tsieh, 1988). After infected fish is eaten, a plerocercoid larva develops into an adult worm in the small intestine of the host. Human beings acquire the infection by consuming the raw or inadequately cooked flesh, roe, liver, or other organs of infected fish. Salmon has been implicated in the transmission of diphyllobothriasis in Japan and the United States (Tsieh, 1988). *D. latum* is the longest tapeworm that infects man, measuring 4 - 15 meters in length and 10 - 20 millimetres in width (Tsieh, 1988). Creamy white in color, *D. latum* includes 3,000 to 4,000 proglottids; the scolex has a pair of bothria in its anterior portion that serves as an organ of attachment (Tsieh, 1988). The immature operculated eggs are released into the feces. Man serves as the definitive host; dogs, cats, and bears serve as the reservoir hosts. Diagnosis is made by finding for gravid proglottids and eggs in feces.

The major clinical manifestation is pernicious anemia although most infections are asymptomatic; the parasite can prevent the absorption of vitamin B12 by the host (Tsieh, 1988). Praziquantel is highly effective in treating the infection; parenteral vitamin B12 should be given if B12 deficiency is evident (Nutmand and Weller, 1998).

Diphyllobothriasis is reported in Japan (Tsieh, 1988), Finland (Kyronseppa, 1993), Korea (Min, 1990; Lee *et al*, 1994) and the United States (Tsieh, 1988); no prior cases have been documented in Malaysia.

## CASE REPORT

A 62-year-old Chinese male was seen at the outpatient clinic of Gleneagles Intan Medical Centre, Kuala Lumpur, in June 2000 presenting with a four-day history of passing watery stools; no mucus or blood had been seen in the stools. The patient had slight abdominal discomfort and no fever. Clinical examination was normal. Charcoal and Imodium tablet were prescribed. Two days later, the patient passed off white proglottids in his stool which was sent to the Parasitology Department, Faculty

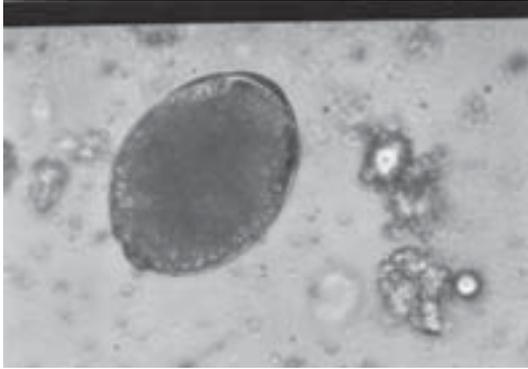


Fig 1—*D. latum* egg recovered from the gravid proglottids passed in the patient's feces. Note the inconspicuous operculum and the terminal knob.



Fig 2—Examples of the proglottids of *D. latum* passed in the patient's feces.

of Medicine, University of Malaya, Kuala Lumpur for identification. A diagnosis of *Diphyllobothrium latum* was confirmed by examination of the gravid proglottids that had expelled; typical operculated eggs were seen after rupturing the gravid proglottids (Figs 1, 2). The patient purchased praziquantel from an overseas source: this was taken as a single dose of 750 mg. The patient has been well since his treatment. On direct questioning, the patient admitted a fondness for *sashimi* (Japanese raw fish) which he ate regularly; none of his dining companions had been unwell.

Even though most cases of *D. latum* infection are asymptomatic, manifestations may include transient abdominal discomfort, diarrhea, vomiting, weakness and weight loss. Occasionally, infection can cause acute abdominal pain and intestinal obstruction; rarely cholangitis or cholecystitis may be produced by migrating proglottids (Nutman and Weller, 1998). Our patients presented with diarrhea and slight abdominal discomfort. With the burgeoning of Japanese restaurants in Malaysia, more Malaysian people are likely to adopt the Japanese way of eating and, as supplies

of raw fish are imported from Japan, doctors should be aware of the greater likelihood of *D. latum* infection. Hospitals should have supplies of praziquantel, so that patients can be given proper treatment.

## REFERENCES

- Kyronseppa H. The occurrence of human intestinal parasites in Finland. *Scand J Infect Dis* 1993; 25: 671-3.
- Lee SH, Chai JY, Seo M, *et al.* Two rare cases of *Diphyllobothrium latum* type infection in Korea. *Kisaengchunghak Chapchi* 1994; 32:117-20.
- Min DY. Cestode infections in Korea. *Kisaengchunghak Chapchi* 1990; 28 (suppl): 123-44.
- Tsieh S. Diphyllbothriasis, hymenolepiasis and dipylidiasis. Color atlas and textbook of diagnostic parasitology. New York: Igaku-Shoin, 1988: 283-5.
- Nutman TB, Weller PF. Diphyllbothriasis. Harrison's principles of internal medicine, Vol I. International edition, 14<sup>th</sup> ed. USA: McGraw-Hell, 1998: 1226-7.