Gastroenterologia Japonica
Vol. 8, No. 3, –1973–

–Original Article–

AN AUTOPSY CASE OF LIVER CIRRHOSIS DUE TO SCHISTOSOMA JAPONICUM, COMBINED WITH HEPATOMA AND GASTRIC CANCER

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Summary

Not many cases have been reported of liver cirrhosis due to schistosomiasis complicated by hepatoma except for those recently reported by Iuchi and his co-workers. Furthermore, a simultaneous occurrence of hepatoma and gastric carcinoma appears to be extremely rare.

The authors report a case of a 48-year-old Japanese male with liver cirrhosis probably due to schistosomiasis as well as hepatoma and a superficial spreading type of carcinoma of the stomach.

Relatively few reports are yet available on liver cirrhosis due to **Schistosoma japonicum** complicated by hepatoma. Aside from the 65 cases reported by Iuchi et al. (1971), only 6 cases have been sporadically reported (1, 2, 3, 4). We have kept a case of liver cirrhosis complicated by hepatoma under observation for the past 2 years. Subsequent autopsy revealed liver cirrhosis due to an infecction of **Schistosoma japonicum** complicated by hepatoma and gastric carcinoma.

An autopsy case is reported here of a primary hepatoma with liver cirrhosis due probably to schistosomiasis caused by **Schistosoma japonium** complicated by gastric carcinoma.

Case Report

Case history: Forty-eitht-year-old male; policeman.

The patient lived in the Yamanashi Prefecture only during his childhood. He was reported to have suffered from infectious hepatitis in 1967. Subsequently he was admitted to this hospital on two occasion, in 1969 and 1970 for liver cirrhosis. He was a heavy alcoholic drinker. The patient was hospitalized again on May 20, 1971 for anorexia, an upper abdominal tumor and a sensation of ab-

Key words: *liver cirrhosis, Schistosoma japonicum, hepatoma, carcinoma of the stomach, double cancer.*

dominal distension. No family history of schistosomiasis due to **Schistosoma japonicum** was found.

Physical examination at the time of admission revealed a properly developed, well-nourished, middle aged male with a blood pressure of 130/80 mmHg and a pulse rate 72/min with regular rhythm. He showed a slight janudice but neither anemia nor palpable cervical lymph nodes. Bilateral gynecomastia, palmar erythema and vascular spider over the anterior chest wall were noted. The heart and lungs were not remarkable. Lung-liver border was at the Vth I.C.S. The liver edge was palpable four finger breadths below the right costal margin, and sthe urface was firm and irregular. Neither kidneys nor spleen were palpable. Tendon reflexes were normal. There was no edema of the extremities. Results of the laboratory test on admission are summarized in Table 1.

Abnormal results included an albuminuria. Icterus index was 15, S-GOT 74 units, and AL-P was 14.1 (Kind-King U.). The other boratory data are summarized in **Table 1.** G.I. series were negative except for the presence of a tumor mass pressing the lesser curvature of the stomach. The clinical course was over the period of two years (1969 to 1971)

Examination of the blood disclosed polycythemia (erythrocytes 523×10^4, Hb 17 g/dl) in 1971, but no eosinophilia for the last two years. S-GOT, S-GPT, AL-P and icterus index gave elevated values in May 1969 and from May 1971 to his death. Neither hepatomegaly nor ascites were obvious till May 1971. TTT, ZTT, CCF, and γ-globulin were elevated from July to September 1969, followed by a subsequent return to the normal value. Liver biopsy revealed a finding of liver fibrosis on the second hospitalization in 1970, but failed to demonstrate the ova of **Schistosoma japonicum.** The upper gastrointestinal roentgenogram did not reveal varices, filling defect, or niches. A scintigram (**Figure 1**) in August 1970 revealed a hepatomegaly and a moth-eaten defect in the left lobe, but no splenic shadow. When a hepatomegaly was detected for the first time in May 1970, α-fetoprotein reaction (Ouchterlony method) was strongly positive.

Table I. Laboratory finding on admission 20. may. 1971

Hematological examination	RBC	523×10^4	Liver function test	M.G.	15
	Hb	17.1 g/dl		T.T.T.	3.3 u
	C.I.	1.02		Z.T.T.	8.5
	Ht	46%		C.C.F.	(+)
	WBC	5300		GOT	74
	Non Seg	13%		GPT	16
	Seg	45%		Al-P	14.1
	Lymph	33%			
	Eos	2%	Blood chemistory	T.P. 7.7 g/dl	K 3.4 mEq/L
	Mono	6%		Alb 53.6%	Na 138 mEq/L
				Glob 46.4%	Cl 105 mEq/L
Urinalysis	Albumin	(##)		α_1 5.0%	Cholest 167 mg/dl
	Sugar	(−)		α_2 9.8%	Sugar 76mg/dl
	Urobilinogen	(+)		β 2.4%	BUN 9.4 mg/dl
	Bilirubin	(−)		γ 19.3%	Cleatinin 0.83 mg/dl
	Sediment	RBC 1~2/1 f. WBC 5~6/1 f.		A/G 1.16	
			Feces	guajac test	(−)

Fig. 1 Liver scan showing a large defect in the left lobe and an enlarged right lobe

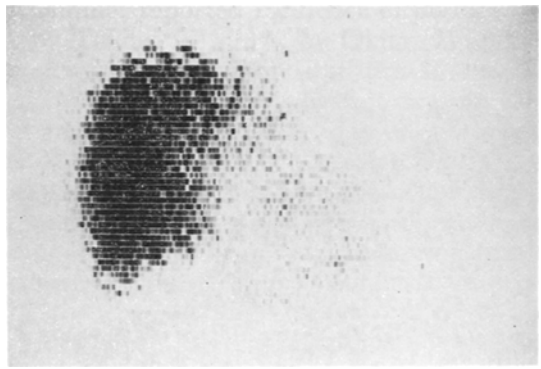

Fig. 2 Irregular nodules on the cut surface of the liver

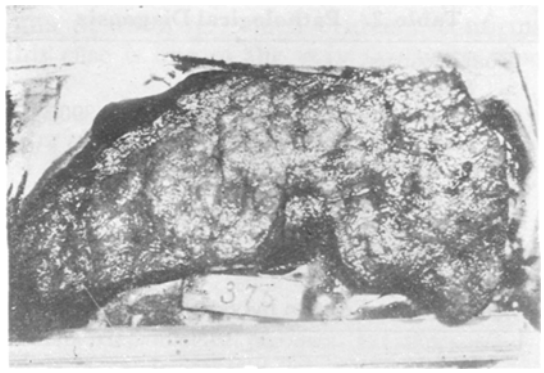

Fig. 3 Section from the liver showing ova of Schistosoma japonicum and hepatoma cells in the lower half (200×) H. and E. stain

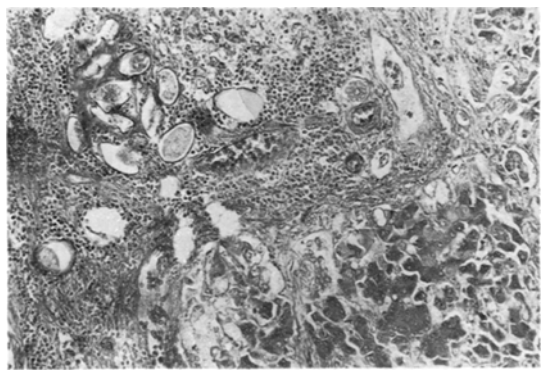

Fig. 4 Section from the gastric lesion showing the picture of adenocarcinoma of the stomach (superficial spreading type).

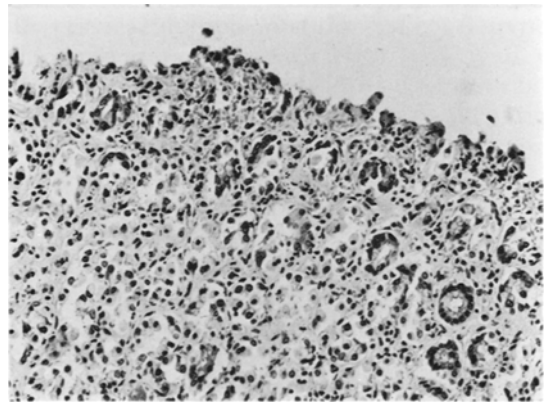

Table 2. Pathological Diagnosis

1. Double cancer.
   a. Schistosomiasis japonica
      ⟶Liver cirrhosis and Hepatoma (3900 g).
   b. Gastoric cancer (Mucosal carcinoma).
2. Metastasis : Lungs.
3. Hemorrhagic Ascites.
4. Bloody Mass in Intestine.
5. Congestive Spleen 120 g microthrombosis
6. Bleeding tendency.
7. Adenomatous Prostata hypertrophy.

He was under treatment with a diet therapy and an anticancer treatment for one month from May 20, 1971, until he died of hepatic coma.

Autopsy finding (**Table 2**): Liver was considerably enlarged (weight 3,900 g) with an irregular surface covered by coarse nodules. Sections through the liver were almost entirely occupied by irregular nodules of various sizes. (**Fig. 2**). Histological findings (**Fig. 3**) indicated a hepatoma and clusters of ova of **Schistosoma japonicum** in the interstitium. Gastric mucosa revealed macroscopic atrophy but no ulcer or tumor, while the microscopic examination disclosed an adenocarcinoma of the mucosal type (**Fig. 4**). No ova of **Schistosoma japonicum** were found in other parts of the digestive system.

Discussion

In this case, liver cirrhosis complicated by hepatoma was clinically suspected, but liver biopsy revealed a histological liver fibrosis complicated by hepatoma. It was not until the autopsy that ova from **Schistosoma japonicum** as well as the early gastric cancer were found.

Au-antigen reaction is known to be positive in many cases of liver cirrhosis and

hepatoma of familial or regional occurrence. Iuchi (5) reported negative Au-antigen reaction in familial liver cirrhosis due to **Schistosoma japonicum.** This case showed no familial nor regional specificity, and Au-antigen reaction was negative. In hepatoma, reported incidence of positive α-fetoprotein in the serum varies: 75% by Takagi (6), 73% by Okita (7) and 77.7% by Uriel (8). α-fetoprotein was positive. Based upon statistics in the Kofu district where schistosomiasis caused by **Schistosoma japonicum** is prevalent, Iuchi reported that the incidence of hepatoma associated with liver cirrhosis due to Shistosomiasis japonica was 25.7% and that with liver cirrhosis not due to Shistosomiasis japonica was 7.1% (9). Furthermore, 90.8% of primary hepatic cancer complicated by liver cirrhosis due to schistosomiasis was hepatoma, and 9.2% were cholangioma (5). It is very interesting that hepatoma develops very often in liver cirrhosis due to schistosomiasis caused by **Schistosoma japonicum.**

It is very difficult to establish the diagnosis of a double cancer (gastric cancer and hepatic cancer) or of an independence of the tumors between each other. In Japan only five cases of double cancer (gastric cancer and hepatic cancer) were reported for the past fifty years up to 1961 according to Nishi (10). Besides this, no other reports were found in the literature. In the case reported herein, an early gastric adenocarcinoma was confirmed in addition to the anatomical findings of a hepatoma at autopsy. Such evidence confirms the presence of a double cancer and this case is one of the very few cases reported in Japan.

Note: The detail of this case report in Japanese was pubilshed in KANZO (1972); 13:728–732

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Received 21st May 1973.
Accepted 18th Jun. 1973.