

# Hemoperitoneum Resulting From Injuries to Liver with a Benign Vascular Tumor During Acupuncture: A Case Report

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Various complications following acupuncture have been reported. In most cases, complications occur from the close apposition of vital organs and acupuncture sites. These complications can be avoided if acupuncturists are trained in appropriate medical science such as anatomy. However, our case is somewhat different from the norm. The deceased received acupuncture on the abdomen, provided by an acupuncturist. Unexpected symptoms occurred suddenly and she was transported to a hospital where she died of hemoperitoneum. On the postmortem examination, a well-defined vascular tumor was identified on the front of the liver, which was also cirrhotic; a few localized injuries were identified on the cystic wall of the tumor and surrounding liver parenchyma. We assumed these injuries were complications of acupuncture. Therefore, we present this case to suggest that acupuncturists should be educated to be vigilant for complications following treatment to reduce the risk of these tragedies.

**Key words :** acupuncture, autopsy

## Introduction

Acupuncture has become a part of alternative and complementary medicine and is widely considered to be safe.<sup>1-5)</sup> Nevertheless, many adverse effects related to acupuncture have been known. Some of them, such as pneumothorax, hemothorax, cardiac tamponade, and cerebrospinal injuries so on,<sup>3-12)</sup> when they occur in vital organs can be fatal. This case also showed such fatal complication during acupuncture. But in some aspects, it is somewhat different from the complications mentioned above. Therefore, we will present our study by comparing with other cases.

## Case Report

The deceased was a 51-year-old woman who suffered from pain in both knees. She visited a local health care center run by a qualified acupuncturist.

According to the statement of the acupuncturist, the deceased complained that she could barely walk due to dizziness and that for a long time she has suffered from memory loss, blurred vision, and loss of appetite. The acupuncturist thought that her condition was too poor to receive the full course of acupuncture that she needed and decided to treat her half heartedly by giving her only a partial treatment. He provided acupuncture on her hands, feet, head (Baekhoe; posterior to bregma), and abdomen (between the epigastric area and the umbilical area). 3 kinds of needles were used during the procedure. 3 silver colored metal needles (handle 2 cm in length, needle 4 cm in length), a long gold colored metal needle (handle 2 cm in length, needle 3 cm in length) and a short gold colored needle (handle 2 cm in length, needle 1.5 cm in length). He applied the needles at a right angle about 1 cm deep into her skin and subcutis. While receiving acupuncture, she complained of abdominal pain with nausea. She

started vomiting and soon lost her consciousness. She was transferred to a local hospital where her abdominal CT scan showed hepatic injury with hemoperitoneum. Then she was transferred to a university hospital to receive treatment and suddenly died while undergoing further evaluations. Because she died during acupuncture and the cause of hepatic injury with hemoperitoneum was unclear, this case was reported to the police and we were consulted for the postmortem examination.

On external examination, a small red spot, assumed to be an acupuncture needle mark, was identified on between epigastric area and umbilical area (Fig. 1). The other needle marks with subcutaneous hemorrhage on right lateral aspect of her neck, both cubital fossa, both inguinal areas, and the dorsum of right hand were considered to have occurred in the course of the additional evaluation and emergency treatment. The conjunctiva of eyelids and oral mucosa were pale. A subcutaneous hemorrhage with abrasion formed by cardiopulmonary resuscitation (CPR) was identified on the sternal region and small contusions were found on the right forearm and anterior aspects of both legs. The postmortem lividity was very weakly formed on her back.

On internal examination, there were hemoperitonem (about 3,600 ml) in the abdominal cavity. A well-defined and collapsed cystic mass was identified on the front of right lobe of the liver (Fig. 2). The

surrounding hepatic parenchyma showed micro-nodular cirrhosis with fatty change. A small localized injury was found on the cystic wall and another small localized injury, on the hepatic parenchyma near the mass (close to the border of the mass). The cut surface showed a tract with local hemorrhage, connected with the localized injury on the hepatic parenchyma near the mass (Fig. 3 and 4). There were no injuries on other internal organs and or major vessels. Microscopically, the mass was cavernous hemangioma. Some neutrophils infiltrated around the injury tract with hemorrhage. Toxicological study was negative except for lidocaine and atropine administrated during CPR. The cause of death was determined as hemoperitoneum from injuries of

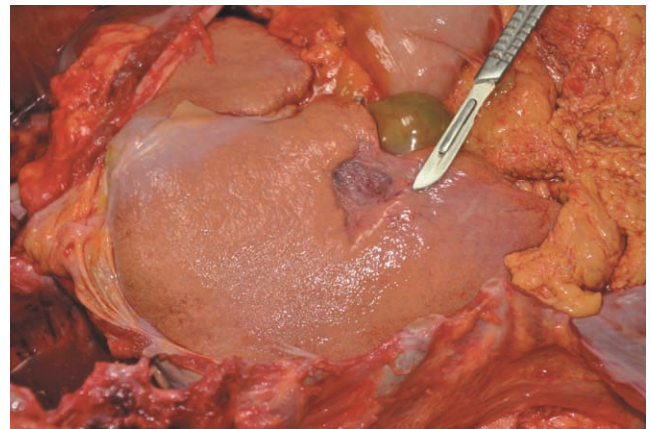


Fig. 2. A well defined and collapsed cystic mass is identified on the front of the liver which is nearly located between the epigastric and the umbilical areas.

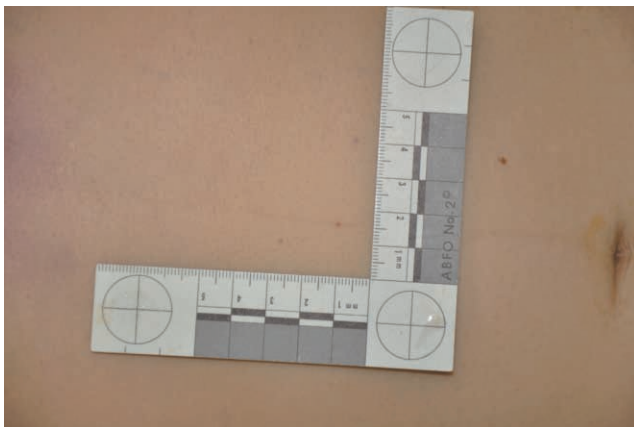


Fig. 1. A small red spot assumed to be an acupuncture needle mark is identified on between the epigastric area and the umbilical area.



Fig. 3. 2 small localized injuries are spotted on the cystic wall of the mass and the hepatic parenchyma near the mass (close to the border of the mass).

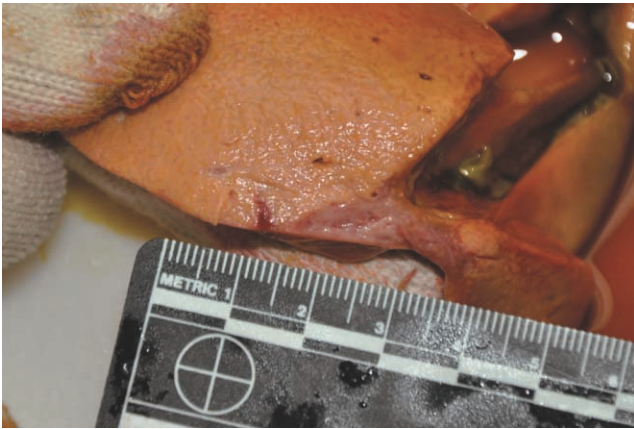


Fig. 4. The cutsurface shows a tract with local hemorrhage and it is connected with the localized injury on the hepatic parenchyma near the mass.

cavernous hemangioma in liver and surrounding hepatic parenchyma by acupuncture.

## Discussion

Reviewing cases in which the deceased died suddenly or unexpectedly during or after acupuncture and in which we were consulted on the postmortem examination records in our institute. The causes of deaths in these cases consisted of natural diseases such as acute myocardial infarction, aortic dissection, and cerebral infarction, and fatal complications following acupuncture including pneumothorax. There was also 1 case, assumed to be acupuncture shock.<sup>[2]</sup> In related literature,<sup>[3-11]</sup> we found other cases with fatal complications including pneumothorax, hemothorax, cardiac tamponade, hemopericardium, cerebrospinal injury, kidney and liver injury, and other nonfatal complications such as infection, hemorrhage, irritation symptoms so on. Most of these complications had one thing in common: they occurred from the close position of vital organs and acupuncture sites. In other words, if acupuncture is provided by experienced and skilled practitioners based on scientific medical knowledge, including anatomy, those complications can be avoided.

However, in this case, the fatal complication of hemoperitoneum occurred from injuries of a vascular tumor in liver caused by acupuncture. On autopsy, the

cystic mass was already collapsed but it was most likely a protruding mass of benign vascular tumor on the front of liver that was very close to the abdominal wall. These things coupled with liver cirrhosis implied that she was susceptible to bleeding and that all treatments should have been conducted more cautiously after a doctor's examination. Moreover, according to the reports from police officers, the acupuncturist provided acupuncture haphazardly without any prior examination of the patient's condition. That is to say, the lack of recognition of each patient's condition or disease, as well as inexperienced skill, caused this serious complication. But it would be too much to expect acupuncturists to provide examination that only experienced doctors can perform.

There were some cases in domestic reports of serious complications (hemopericardium with pneumothorax, rapid dermal spread of breast cancer, and primary inoculation of tuberculosis) occurring from acupuncture provided by acupuncturists.<sup>[13-15]</sup> Some serious complications of these cases can also be considered as the result of treatments by unqualified acupuncturists. A survey targeting professional acupuncturists in the United Kingdom suggested that there were no serious adverse events associated with treatments provided by them.<sup>[16]</sup> However, because the survey was conducted based on self-reported data, some serious events could have been omitted consciously or unconsciously.

In Korea, professional health practitioners, including acupuncturists, have been allowed to operate legally. According to regulation, Ministry of Health and Welfare can allow so called 'Quasi-medical practitioners', covering bone setters, acupuncturists, moxibustioners, and masseurs, to operate as professional health practitioners after passing a qualifying exam.<sup>[17]</sup> Only people who completed bonesetting, acupuncture, or moxa courses during, at least 3 years or more in the related institute designated by the minister of Health and Welfare, or those who went to the equivalent school in a foreign country which are approved by the minister of Health and

Welfare, and acquired a qualification or a license, may be eligible for qualifying examinations. But, unfortunately, these regulations don't cover or support any preventive measures against complications.

Therefore, as this case shows, in order to reduce the occurrence of complication following acupuncture, acupuncturists, in addition to their skills and techniques, should be trained for these potential complications based on scientific medical knowledge in the course of their education. Ideally, their practice should be done under a doctor's control. But, at the very least, they should be committed to being monitored or regulated and have a regular program to share these or any other complications with the medical community.

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