Acupuncture Needles in the Abdominal Organs: Features on Plain Radiography, US and CT

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Abstract

Acupuncture with gold needle insertion is utilized in Oriental medicine, and the effect of therapy is represented by anti-inflammatory and analgesic function. But sometimes the needle is erroneously inserted into abdominal organs, and then it may cause dangerous complications. We report a case of multiple gold needles in the abdominal organs without having definite clinical symptoms.

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INTRODUCTION

Acupuncture has been widely performed for the treatment of different diseases(1,2) in the far eastern countries, including Korea, China and Japan(1). There are many types and methods of acupuncture(3). Permanent insertion therapy of gold needle in particular is usually performed for the purpose of continuous stimulus to control pain and accentuate a therapeutic effect(4). We report a previously unreported case which shows many gold acupuncture needles in the liver, pancreas, right kidney, abdominal subcutaneous fat and muscle layers.

CASE REPORT

A 67-year-old woman was admitted due to epigastric pain and palpable mass in the right upper quadrant of the abdomen. She had had chronic liver disease for 10 years, palpable mass in the right upper quadrant which was suggestive of hepatomegaly had been found 3 years before, ascites had been developed 1 year before. Because of liver cirrhosis, generalized myalgia and neuralgia, she was given multiple acupunctures in the anterior abdominal wall and both paraspinal muscle areas 10 years previously, but she did not feel discomfort in the acupuncture sites. Laboratory data indicated she had diabetes mellitus and liver cirrhosis.

On the simple abdomen supine view, multiple tiny threads of metallic density were seen in the abdomen and pelvis, especially along the lower margin of liver, bilateral paraspinal areas of lower thoracic, lumbar and sacral bones. Serpentine and tortuous tubular calcifications were noted in the left upper quadrant and lower abdomen, which were suggestive of splenic and bilateral common iliac arterial calcifications(Fig.1).
Fig. 1. Plain abdomen radiography: multiple acupuncture needles along the lower margin of liver, bilateral paraspinal areas of lower thoracic, lumbar and sacral bones. Splenic and bilateral common iliac arterial calcifications.

Fig. 2. Transverse sonogram of the liver: multiple dense acupuncture needles with comet tail reverberation artifacts in the left lobe of liver.

The ultrasonography (US) and computed tomography (CT) of the abdomen were done for the evaluation of liver cirrhosis. On the US, multiple strands like echogenic foci with comet tail of reverberation artifacts were seen in the left lobe of liver (Fig. 2).

On the CT of the abdomen, multiple strand metallic acupuncture needles with edge gradient artifacts were identified in the left lobe of liver, pancreatic body, right kidney, subcutaneous fat layer of anterior and right lateral abdomen, right abdominis muscles, right properitoneal fat and both quadratum lumborum muscle (Fig. 3a, b). But

Fig. 3. CT of the upper abdomen: a. multiple acupuncture needles in the left lobe of liver, b. multiple needles in the subcutaneous fat layer, right abdominis muscles, pancreas, right kidney and right quadratum lumborum.
symptoms and signs due to multiple acupuncture needles did not develop, and the patient was discharged with clinical improvement of liver cirrhosis and diabetes mellitus.

DISCUSSION

There are many types and methods of acupuncture. There is one in which a needle is punctured into the subcutaneous fat layer for 15-20 minutes and then removed. In another, a needle is inserted into the subcutaneous fat layer for 2-3 days and then extracted (3). In the gold needle insertion method, a needle is inserted and left permanently in the subcutaneous fat and/or muscle layers. The gold needle is small, thread-like and measures from 5-10 mm in length. Sometimes a gold needle is erroneously inserted into the abdominal organs, and then it may cause dangerous complication, such as infection and bleeding (4).

Acupuncture is believed to be a safe procedure, but several complications such as pneumothorax, cardiac tamponade, serum hepatitis have been reported (1). In our case, multiple gold needles were erroneously inserted in the liver, pancreas, right kidney with no side effects.

On the US, multiple acupuncture needles in the liver have to be differentiated from gas within the biliary tree, or portal venous system, intrahepatic biliary calculi, calcified hepatic metastasis and granulomatata (5). To differentiate from gas within the biliary tree or portal venous system, US findings of gas consist of hyperechoic foci in the distribution of intrahepatic biliary tree or portal vessels (5). In the intrahepatic biliary calculi, intrahepatic ductal dilatation is usually associated and calcified hepatic metastasis and granulomata demonstrate discrete and strong shadowing (5).

On the CT of abdomen, acupuncture needles can be easily differentiated from other metallic foreign bodies, such as bullets. Surgical clips are very similar to acupuncture needles, but shape, length, and thickness are different and previous history for surgery is important clue. Acupuncture needles are identified by their proximity to acupuncture points, which are usually subcutaneous fat and/or muscle layers, as well as in untoward sites.

We report a case of multiple gold needles impaled on abdominal organs without definite clinical symptoms. On the US, gas within the biliary tree or portal venous system, intrahepatic biliary calculi, calcified metastasis and granulomata in the liver, on the CT, surgical clips should be differentiated.

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금침술은 동양 의학에서 사용되는 침술의 한 종류로서, 주로 항소염과 진통작용이 있다. 그러나 드물게는 금침이 복부 장기내로 잘못 삽입되는 경우가 있으며, 이때 위험한 합병증이 동반될 수도 있다. 저자들은 다수의 금침이 복부 장기내로 삽입되었으나 임상증상이 없었던 일례를 보고하는 바이다.