

Intraperitoneal Residual Contrast Agent from Hysterosalpingography Detected Following Cesarean Section

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Residual contrast agent from hysterosalpingography was detected in the abdominal cavity in a patient who had undergone Cesarean section. It is believed that magnetic resonance imaging alone would be sufficient to distinguish such medium from a foreign body in such cases.

Key words: Cesarean section, Residual contrast agent, hysterosalpingography

INTRODUCTION

A number of studies have reported the presence of foreign objects in the peritoneum following Cesarean section [1–3]. One study has also reported residual contrast agent from hysterosalpingography (HSG) following this procedure [4]. Here, we report a case of a re-laparotomy being performed as a result of residual HSG contrast agent following Cesarean section being mistaken for a foreign object.

CASE REPORT

The patient was a 36-year-old woman 154 cm in height and 57 kg in weight. She was scheduled to undergo Cesarean section due to a diagnosis of breech birth and low-lying placenta. Her medical history revealed that an earlier pregnancy had been aborted and that she had undergone surgery for endometriosis. A preoperative examination, including blood tests, X-ray, and a 12-lead electrocardiogram revealed no abnormalities. Combination of epidural and spinal subarachnoid anesthesia was selected. The epidural anesthesia was performed with puncture at intervertebral L1/2 and epidural catheter was inserted 4 cm cranially. Spinal subarachnoid anesthesia was performed with puncture at intervertebral L2 /3 and 1.8 ml high specific gravity bupivacaine injected into the subarachnoid space. The Cesarean was commenced after confirming that the level of anesthesia was Th5. The baby, a girl weighing 2540 g (APGAR score: 9/9) was delivered safely 15 minutes later. Surgery was completed as scheduled after confirmation of hemostasis and the number of devices and pieces of gauze retrieved. Postoperative radiography of the abdomen revealed an oval shadow in the left pelvic region (Fig. 1: left). Further abdominal X-ray was initially performed postoperatively as it was believed that gauze had been left in the abdominal cavity. The presence of a foreign body was suspected, so a computed tomography

(CT) scan of the abdomen was obtained. The results revealed a shadow within the same absorption range as metal in the left Pouch of Douglas (Fig. 1: middle), suggesting the presence of a foreign body in the pelvis. Smaller shadows observed in the vicinity of the main shadow were believed to represent fragments worn away from some larger metal object, and the involvement of contrast agent was not suspected. A re-laparotomy was therefore performed under general anesthesia, but no foreign body was found in the pelvis. Further X-ray fluoroscopy, however, again indicated the presence of a shadow in the left pelvic region. On reopening the abdominal cavity, the surgeon excised tissue from the site coinciding with shadow on the X-ray fluoroscope. The excised tissue was fatty. On pinching the excised tissue lightly between his fingers, the surgeon found that it was elastic, not hard like metal.

The patient had undergone fertility treatment including hysterosalpingography (HSG) two years prior to presenting at our hospital (Fig. 1: right). It was believed that this elastic tissue was the result of contrast agent combining with normal fatty tissue.

Further X-ray fluoroscopy revealed that the shadow in the pelvis had now disappeared. It was therefore concluded that the residual contrast agent had been removed and the procedure was concluded. Therefore, the diagnosis was residual contrast agent from this earlier procedure remaining in the peritoneal cavity. Further postoperative radiography revealed that the shadow had disappeared (Fig. 2). It was confirmed that the residual contrast agent in the pelvis had been excised.

DISCUSSION

Here, we have reported a patient in whom residual intraperitoneal contrast agent from HSG was discovered following Cesarean section. In the present case, the absorption range of the signal obtained on CT was



Fig. 1 Pre-operative X-rays
Left : (←)High brightness shadow in the left pelvic
Middle : (→)The shadow of absorption range the same as metal objects in the left Douglas pouch
Right : Findings of hysterosalpingography



Fig. 2 Post-operative X-ray
High brightness shadow is disappeared in the left pelvic

similar to that of metal. In earlier studies, however, preoperative magnetic resonance imaging (MRI) of the Pouch of Douglas produced a signal similar to that of fat [4]. As a result, no re-laparotomy was required and the situation was resolved solely by monitoring the patient's progress. This suggests that pre- or postoperative MRI would obviate the need for re-laparotomy here, too. Two types of contrast agent are used in HSG, one water-soluble and the other oily. Oily contrast agents offer the following advantages over those that are water-soluble: 1) they are less painful to the patient;

2) they are cheaper; and 3) a higher pregnancy rate [5]. Pregnancy is established in approximately 40% of cases of unexplained infertility after HSG. Approximately 55% of patients become pregnant within six months following HSG, and approximately 80% within one year [6]. An oily contrast agent becomes foamy as it emerges from the narrow oviduct, making it easier to determine the state of the fallopian tubes. For these reasons, oil-based contrast agents are used at our hospital. The disadvantage of such agents, however, is that they tend to remain in the abdominal cavity for a long

time postoperatively. The advantage of a water-soluble contrast agent, on the other hand, is that because it is absorbed immediately after use it does not remain in the abdominal cavity. The drawback with this option, however, is that it is expensive. The advantages of an oily contrast agent, then, outweigh those of a water-soluble one. Therefore, it is the policy of our hospital to continue to use an oily contrast agent in the future. Radiographic examination is usually avoided as much as possible in pregnant women to prevent harmful exposure. However, if a patient with a history of HSG is scheduled to undergo Cesarean section, the anesthesiologist will need to confirm the presence or absence of residual contrast agent in the abdominal cavity. The effect of radiation at the late stage of pregnancy would be minimal, and if a shadow were observed, further investigation could be carried out by means of MRI, which does not use ionizing radiation. No special or rare form of anesthetic management was required in the present case. In cases where the presence of a foreign body is suspected in the peritoneum following Cesarean section in a patient who has previously undergone HSG, the anesthesiologist should keep in

mind the possibility of residual contrast medium before considering a re-laparotomy.

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