A Case of a Neurological Complication After Transvaginal Oocyte Retrieval

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A patient is described who developed neurological signs of the left leg following transvaginal ultrasound-guided puncture. A hypodense lesion of the obturator space above the lumbosacral plexus was seen on ultrasound which could explain her signs, due to compression by a hematoma. She recovered completely.

KEY WORDS: obturator fossa; complications; in vitro fertilization.

INTRODUCTION

Transvaginal ultrasound-guided follicular puncture for oocyte retrieval was first described in 1985 (1). This technique has gained popularity due to its relative simplicity. The literature provides information on persistent bleeding from the puncture point, pelvic infection, and pelvic hematoma (2–5) which may complicate this procedure. These complications are not common but may be serious (6). As far as we know neurological lesions due to transvaginal oocyte retrieval have not been described before.

CASE PRESENTATION

A 35-year-old woman developed proximal and distal weakness of the left leg after transvaginal follicle puncture.

Her gynecological history included a spontaneous abortion and two ectopic pregnancies. The ectopic pregnancies caused damage to both tubes. During the treatment of the last ectopic pregnancy it was decided to occlude both tubes laparoscopically. After this an in vitro fertilization (IVF) procedure was started.

Controlled ovarium hyperstimulation was induced with human menopausal gonotropins combined with a long protocol of a GnRH agonist. During the midluteal phase of the cycle, decapeptyl (Ferring B.V., Hoofddorp, The Netherlands), 0.5 mg a day subcutaneously, was administered.

Twelve days later Pergonal (Serono, Zwanenburg, The Netherlands), 150 IU intramuscularly, was started and continued for 9 days.

On the day of discontinuation Pergonal and Decapeptyl, human chorionic gonadotropin (Profasi; Serono), 10,000 IU, were injected intramuscularly. Thirty-four hours later ultrasound-guided transvaginal follicle puncture was performed using a Toshiba Tosbee (SSA-24A model, Japan) with a mechanical probe of 5 MHz. The needles used were from the Follikel Aspiration Set (Gynetics, Amsterdam, The Netherlands), with a diameter of 1.6 mm and a length of 40 cm. Anesthesia (lidocaine, 1%) was given paracervically and around the sacrouterine ligaments.

No difficulties were encountered during the procedure. When the patient stepped down from the examination table she noticed weakness of her left leg and had difficulty standing on it. She also experienced tingling in this leg but no pain. Her right leg was not affected. During the day the complaints got worse. Neurological examination showed a proximal paresis of the left leg, which made it impossible for the patient to stand up from a stooped posture and difficult for her to walk on her left heel. There were paresthesias on the lateral side of the left lower leg and foot. On the left side the ankle reflex was diminished. Other

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tendon reflexes were symmetrical. So all the signs were in the left leg.

On ultrasound examination of the pelvis a hypodense lesion 5 cm in diameter was seen retroperitoneally in the obturator space. This could match a hematoma. The patient was admitted to the hospital for observation, with the diagnosis of compression of the lumbosacral plexus as the most likely cause of her signs.

It was decided that there was insufficient reason to perform a neurosurgical decompression procedure. The next day almost all complaints had disappeared, as well as the neurological signs. The hypodense lesion on ultrasound had also disappeared. On reevaluation 1 month later the patient's paresis and paresthesia had completely disappeared.

DISCUSSION

Ultrasound-guided transvaginal puncture is a frequently used method for retrieval of oocytes, and serious complications are rare. The neurological signs in our patient are explained as followed. Inability to stand up from a crouched position matches a lesion on lumbar levels 2 to 4 (L2, L3, and L4). Difficulty walking on the heels matches a lesion on L4–L5. An absent ankle reflex matches sacral levels 1 and 2 (S1–S2), and sensibility disturbance of the lateral side of the left lower leg and foot, L5–S1. Therefore she must have had a lesion of the lumbosacral plexus.

Ultrasound examination showed a hypodense lesion in the obturator space. The lumbosacral plexus is the dorsal margin of the obturator space. This is a feared location during a pelvic lymphadenectomy because of bleeding from the branches of the internal iliac vein and obturator vein (7). It is possible that during oocyte pickup a branch of the internal iliac vein was punctured and blood may have accumulated in the obturator space, compressing the lumbosacral trunk. This might explain the signs in our patient. During the recovery blood may have gradually escaped from the obturator space into the parametrium.

Another possible explanation of the neurological signs is direct puncture of the lumbosacral plexus. However, in that case the patient would have experienced radiating pain and the signs would have continued for a longer period.

Another option is that the signs were caused by the anesthesia used. The Lidocaine was injected paracervically and around the sacrouterine ligaments. However, this was done superficially, which makes penetration of the obturator space impossible.

In conclusion, the most likely explanation for the neurological signs in our patient is a hematoma compressing the lumbosacral trunk.

As far as we know this is the first publication of a neurological complication following follicle puncture. This is surprising considering the anatomic position of the lumbosacral plexus and sciatic nerve. These nerves are partially surrounded by the vulnerable venous plexus and may lie in the line of puncture with a long needle.

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