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# Fever, Sacral Pain, and Pregnancy: An Incarcerated Uterus

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Uterine incarceration is an uncommon but serious presentation in the emergency department that requires early recognition to improve maternal and fetal outcomes.

**Case:** A 29-year-old female, at 12 weeks gestation, presented to the emergency department (ED) with complaints of fever, sacral pain and urgency. Based on history and physical examination, she was found to have a retroverted, incarcerated uterus. After a failed attempt at reduction in the ED, her uterus was successfully reduced under general anesthesia.

**Discussion:** Pain and urinary difficulties, such as retention and hesitancy, are frequent in pregnancy, yet incarcerated uterus is an uncommon emergency department diagnosis that often presents with these symptoms. Clues to the diagnosis include a retroverted uterus, urinary retention, and pain in a patient presenting in the third to fourth months of gestation. Treatment is by manual reduction of the uterus. Complications range from spontaneous abortion to uterine rupture.

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## INTRODUCTION

Pregnant patients present commonly to the emergency department (ED) with complaints of pain and urinary difficulties including retention and hesitancy. A patient with a complicated previous gynecologic history may be at risk for more than an ectopic pregnancy, spontaneous miscarriage, or urinary tract infection as illustrated in the case below.

## CASE REPORT

A 29-year-old woman, gravida 6, para 1-0-4-1, at 12 weeks gestation, presented to the ED with a chief complaint of fever (reported maximum 103°F) and sacral pain. She denied chest pain, shortness of breath, and any vaginal discharge or bleeding. Her pain was located mid-sacrum at a 5/10 intensity with radiation to the suprapubic area. Additionally, she denied dysuria but complained of increasing difficulty with emptying her bladder. Her past medical history was significant for endometriosis with four laparoscopic procedures, an adenexal cyst, four previous miscarriages, a prior cesarean section, and Perry-Romberg syndrome (localized scleroderma of childhood). An ultrasound completed a week prior for pelvic

pain revealed a viable fetus in an otherwise normal uterus with no retroversion noted.

The vital signs were as follows: blood pressure 121/53 mm Hg, pulse 94, respirations 18, temperature 100.4°F, and pulse oximetry of 100% on room air. The abdominal exam was remarkable for tenderness to palpation on the midline at and below the umbilicus. The patient's complaints of pain in the sacrum and lower lumbar spine could not be further elicited through palpation. There was no costovertebral angle tenderness. The patient reported in previous speculum examinations that her cervix could not be visualized due to severe anterior location, and this was found on our examination also. Bimanual examination revealed diffuse tenderness and a palpable mass in the posterior cul de sac consistent with a retroverted uterus, but otherwise no gross abnormalities. The remainder of her physical examination was unremarkable. Laboratory studies including a basic metabolic panel, complete blood count, and urinalysis were unremarkable. The patient was given a one-liter intravenous (IV) fluid bolus, 1mg hydromorphone IV x 2 for pain control, and ondansetron 4mg IV for nausea. An obstetric/gynecologic

consultation was requested for persistent pain.

The consultant agreed with the prior examination and lab review and made the diagnosis of incarcerated uterus due to the presenting symptoms in combination with the markedly retroverted uterus without repeat ultrasonography. Attempts to manually reduce the incarceration by intravaginal pressure in the ED were unsuccessful due to patient discomfort. She was taken to the operating room for reduction of the incarcerated uterus under spinal anesthesia followed by placement of a vaginal pessary. Her recovery was complicated with a low-grade fever and some pain in the absence of abnormalities in the chest x-ray, urinalysis, or blood count. Her postoperative pain warranted the use of parenteral narcotics and was significantly improved with the removal of the pessary. She was discharged with a viable pregnancy.

## DISCUSSION

Retroversion in the first trimester is reported to occur in up to 15% of pregnancies.<sup>1</sup> Incarceration of the uterus is a rare complication, occurring in one of 3000 cases.<sup>2,3,4,5,6</sup> During a normal pregnancy, between the twelfth and fourteenth weeks of pregnancy, the gravid uterus transforms from a pelvic to an abdominal organ and a retroverted uterus will spontaneously correct as the fundus rises out of the pelvis and falls forward to its normal anatomical position.<sup>3</sup> However, a retroverted or retroflexed uterus can become entrapped between the subpromontory sacrum and the pubis. Factors and preexisting conditions that may predispose a patient to an incarcerated uterus include: multiparity, adhesions from endometriosis or prior pelvic inflammatory disease, anatomical abnormalities, pelvic tumors, and uterine fibroids.<sup>2,3,6,7</sup> Presenting symptoms include: pelvic discomfort and lower abdominal or back pain, dysuria, urinary frequency, urinary retention, overflow incontinence, urinary stasis leading to cystitis, vaginal bleeding, rectal pressure, tenesmus, and progressive constipation.<sup>6,7,8</sup> If untreated, patients may go on to develop anterior uterine wall thinning or sacculation, bladder rupture, preterm labor, premature rupture of fetal membranes, spontaneous abortion, or uterine rupture during labor.<sup>2,5,7</sup>

Although patient symptoms are often reported as non-specific and mimic many of the normal events of pregnancy, the most common complaints are of urinary difficulties, such as retention and hesitancy, due to urethral compression.<sup>2,5</sup> Patients who present with these symptoms during the third and fourth months of gestation should receive a pelvic examination to assess for this serious cause of common symptoms. The typical physical examination of a pregnant woman with an incarcerated uterus often reveals a distended bladder and a fundal height that is less than expected.<sup>3</sup> The cervix is often not visualized with a speculum exam as it is displaced anteriorly, behind the pubic symphysis.<sup>3,6,9</sup> Fetal heart tones can be difficult to auscultate.<sup>3</sup> On bimanual examination, the fundus of the retroverted uterus is palpated

as a large mass in the cul de sac.<sup>3,6</sup> An ultrasound exam can show a uterus displaced posteriorly with a distended bladder anterior to the uterus. In the setting of a retroverted uterus, a fundal placenta can often be mistaken as a placenta previa; as such, magnetic resonance imaging may be useful.<sup>5</sup>

Debates exist concerning whether to emergently reduce the uterus with older reports of fetal demise and more recent ones demonstrating good term pregnancy outcomes.<sup>10,11</sup> Treatment includes first draining and decompressing the bladder with an indwelling catheter. Next, after close consultation with the obstetrician, reduction of the uterus can be attempted by applying steady pressure with two fingers in the posterior vaginal fornix directing the uterus cephalad while the patient is in the dorsal lithotomy position, knee-chest position, or under anesthesia.<sup>2,7</sup> None of these were successful in the patient in this case, so reduction under spinal anesthesia was undertaken. Following a successful reduction, the patient is encouraged to help maintain the corrected uterine position through sleeping in a prone position and with exercises such as the knee-chest and all-fours positions.<sup>6</sup>

Although, this patient did not have ultrasound findings consistent with retroversion at the time of her ultrasound, she did develop symptoms consistent with uterine incarceration in the days preceding her ED visit. Her other risk factors, such as endometriosis or adhesions secondary to her previous surgeries, may have contributed in this case.

In conclusion, incarcerated uterus is a rare but important diagnosis for emergency physicians to recognize and assist in treatment. It is important to consider this diagnosis in patients entering their second trimester with complaints of urinary symptoms, vaginal bleeding and pelvic pain to ensure the safety of the mother and fetus.

The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, nor the U.S. Government.

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