A LITHOPEDION – AN UNUSUAL CALCIFIED ABDOMINAL PREGNANCY: A CASE REPORT

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Abstract

Introduction: Lithopedion is an ectopic pregnancy that progresses to fetal mortality and calcification, as described in the introduction. It is uncommon, with a reported incidence of 1.5% to 2% of all ectopic pregnancies. The fetus expires and is not absorbed by the mother's body, but it evades maternal immunity by surrounding itself with a calcified shell. Lithopedion can be diagnosed through abdominal X-rays, ultrasonography, and CT imaging.

Case presentation: A 73-year-old female complaining of abdominal mass for over three decades and radiating pain to the right hip for a month. The patient is multipara with a history of habitual abortion. There was an immobile abdominopelvic mass in palpation. The ultrasound showed a large calcified mass in the pelvic cavity. Abdominal and pelvic CT revealed a mummified fetus, depicting great detail of the fetal anatomy surrounded by a calcified membrane. The uterus was normal. Our case is suitable with lithokelyphopedion.

Conclusion: Lithopedion is a serious condition associated with high maternal and perinatal mortality rates. The condition was not identified during prenatal visits. A thorough history and physical examination are as important as imaging investigations in this setting.

Keywords: lithopedion, lithokelyphopedion, calcified abdominal mass

INTRODUCTION

The Greek word lithopedion comprises litho (stone) and pedion (infant). Lithopedion is an abdominal pregnancy in which the fetus expires, calcifies, and grows too large to be reabsorbed by the mother's body (1,3,6). The incidence of abdominal pregnancy is 1:11,000 pregnancies, accounting for 1.5–2.0% of all ectopic pregnancies; the incidence of lithopedion is 1.5–1.8% of abdominal pregnancies. As a result, less than 300 cases were reported in medical literature spanning 400 years. The duration of holding the deceased infant varies from four to seventy years, and the patient's age ranges from 23 to one hundred years (1,5).

Lithopedion is frequently asymptomatic for a number of years. Patients seek medical attention primarily due to secondary symptoms such as abdominal pain, abdominal mass, or bladder or rectal compression symptoms (3,7).

There are no typical symptoms or laboratory diagnostics. Cases can be detected by abdominal X-rays, which are typically performed for other purposes, or by palpating masses during abdominal and pelvic physical examinations. Ultrasound of the abdomen can lead to a definitive diagnosis, whereas computed tomography (CT) can help distinguish between alternative differential diagnoses such as calcified fibroid or teratoma. Kuchenmeister distinguished three varieties of lithopedion: lithokelyphos,
lithokelyphopedion, and true lithopedion (1,4,8). We report a case of abdominal pregnancy confirmed by abdominal ultrasound and CT scan.

CASE DESCRIPTION

A 73-year-old female of poor socioeconomic status was admitted to the emergency department of our hospital with complaints of intermittent abdominal pain accompanied by pain that radiated to her right hip a month ago. She has a history of right lower quadrant abdominal mass of constant size for more than three decades. No history of constipation, melena, or dysuria was present. The patient is a multipara with a history of 3 abortions and two normal pregnancies.

She had stable vital signs and essentially normal systemic findings on physical examination. The abdominal examination showed a firm and immobile abdominopelvic mass in palpation. Laboratory findings were within normal limits. The ultrasound showed a large calcified mass in the pelvic cavity, no vascularization with a diameter is 7.4. She was suspected with uterine mass and a differential diagnosis of an adnexal mass.

Abdominal and pelvic computed tomography (CT) revealed a mummified fetus, depicting great detail of the fetal anatomy surrounded by a calcified membrane. It was 8.3 x 9.9 x 8.7 cm in size, femur length was 4 cm, with an estimated gestational age of 20-24 weeks. The uterus and the tubes were normal in appearance, and there were no ruptures. Our case is suitable with lithokelyphopedion.

DISCUSSION

A lithopedion is a calcified intraabdominal fetus that has died. It may be caused by a primary intraabdominal pregnancy or a secondary intraabdominal pregnancy resulting from a ruptured intrauterine or tubal pregnancy (1,5,9). A history of ectopic pregnancy, pelvic inflammatory disease, tubal surgery, congenital and acquired uterine anomalies, and endometriosis are among the risk factors associated with abdominal pregnancy (4,6). This patient's history of multiple spontaneous miscarriages, which may be complicated by subclinical infection, was identified as a risk factor. In this instance, the patient's lack of formal education and poor health-seeking behavior contributed to her delayed presentation.

Abdominal pregnancies manifest nonspecific signs and symptoms, making diagnosis challenging. The most common complaints consist of persistent abdominal or suprapubic pain (100%), bloody vaginal discharge, gastrointestinal symptoms (70%), excruciating fetal movements (40%), and general malaise (40%) (2,7,8). The uterus will not be palpable on physical examination, and the fetal position may be persistently transverse or oblique. However, the majority of patients remain asymptomatic for lengthy periods; consequently, the condition may go undetected until a late gestational age, as in the case presented. Rarely is a diagnosis established prior to surgery. Consequently, the majority are not diagnosed until they develop complications. However, this is dependent on the gestational age at delivery (4,6,10).

In the early presentation, pelvic ultrasound scans are easily detectable, whereas, in late presentation, readily palpable fetal parts may raise the clinical index of suspicion. The availability of computed tomography (CT) scans, and magnetic resonance imaging (MRI) has facilitated the diagnosis and treatment of ectopic pregnancy. Due to early diagnosis and treatment, the incidence of advanced abdominal pregnancy also decreased as a result (1,5,10).

For the formation of a lithopedion, an extrauterine, deceased fetus must remain for at least three months, remain sterile, and avoid being absorbed by the mother’s immune
system by forming a calcified shell around itself. Medically, it is neither diagnosed nor undiagnosed, but favorable conditions must exist for calcification (1,7,9).

Figure 1. Diagram of the pathophysiology of lithopedion (1–3).

In 1880, German physician Friedrich Kuchenmeister identified three subgroups:

1. Lithokelyphos ("Stone Sheath"), where calcification occurs on the fetal membranes and not the fetus, and the fetus degenerates within them.

2. Lithotecnon ("Stone Son") or "true" lithopedion, where the fetus itself is calcified after entering the abdominal cavity following the rupture of the placental (no calcification of the membranes).

3. Lithokelyphopedion ("Stone Sheath and Child"), when both fetus and membranes are calcified (1,4).

In this case, the CT scan result showed that both the fetus and the membranes were calcified, so according to this classification, this case is classified as lithokelyphopedion.

Figure 2. A. Abdominal ultrasound reveals a large calcified mass in the pelvic cavity, suspected uterine or adnexal mass (asterisk); B. Abdominal and pelvic CT revealed a mummified fetus (arrow)
D’Aunoy and King (1922) listed four changes that an abdominal fetus may undergo if it is not removed:

I. Skeletonization, where only the fetus’s bones remain following the disintegration and absorption of the soft parts.

II. Adipocere, where fatty acids, soaps, and salts of palmitic and stearic acids replace the soft parts.

III. Suppuration, where the fetus is destroyed after an abscess has formed, usually due to E. coli infection.

IV. True lithopaedion formation occurs if the fetus remains sterile and is infiltrated with calcium salts to varying degrees (1,4,5).

Figure 3. A-C. CT depicting great anatomy detail of calcified fetus (±1095-1459 HU) molded cranium (asterisk), vertebrae (red arrowhead), costae (yellow arrowhead), superior-inferior limb (blue arrow) surrounded by a calcified membrane (±1999 HU, green arrow) suitable with lithokelyphopedion. D. Uterus (yellow arrowhead) was normal, with no ruptures (arrowhead).
The differential diagnosis includes other calcified pathologic situations, including ovarian tumors, uterine fibroids, urinary tract neoplasms, inflammatory masses or epiploic calcifications (3). Surgery is the mainstay of treatment for abdominal pregnancies. As soon as the diagnosis is made, a laparotomy and removal of the fetus must be conducted to prevent a potentially fatal hemorrhage. As a result of abnormal placental attachment to extraterine structures, including large vessels, there is a high risk of catastrophic bleeding. In a review of 225 case reports, the mean blood loss ranged from 50 to 7,500 mL, and 25% of patients required blood transfusions (6,8,10). In this case, the obstetrician had scheduled surgery for the patient, but the patient refused and never arrived at the hospital. We also lost contact with the patient and his family.

Complications of abdominal pregnancies after a long asymptomatic course include urinary bladder perforation; rectal perforation; extrusion of fetal parts through the abdominal wall, rectum, and vagina; intestinal obstruction; pelvic abscess; tubal infertility; and cephalopelvic disproportion complicating a subsequent uterine pregnancy (2,8).

CONCLUSION

Lithopedion is a rare complication of abdominal pregnancy, a serious condition with a high maternal and perinatal mortality rate and a lack of prenatal diagnosis. In addition to a thorough history and physical examination, imaging tests such as X-rays, repeat ultrasounds, CT scans, and MRIs can aid in the diagnosis of this disorder. Due to the absence of adequate medical attention for clinicians and health workers, we advise the clinician to be cautious when diagnosing this disease.

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCE

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