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Long-Term Retention of a Lithopedion with Preserved Fertility and Subsequent Live Birth: A Case Report

Dr. Abdukadir Abdullahi Hashi[§], Dr. Abdirizak Ali Abdi[‡ϑ*], Dr. Sucdi Abdirashid Shire[§], Dr. Mohamed Abdirahman Omar[¶ξ], Dr. Abdiwali Ahmed Hirey[‖], Dr. Amina Hassan Husein[¥], and Dr. Muna Husein Hassan[‖]

Affiliations
§ Department of obstetrics and gynecology, Banadir Hospital, Mogadishu, Somalia (OA)
‡ Faculty of Medicine and Surgery, Salaam University (OA)
¶ Department of Public Health Research, Training and Disease Surveillance, Banadir Hospital, Mogadishu, Somalia (OA)
‖ Office of the Medical Director, Department of Administrative Affairs, Banadir Hospital, Mogadishu, Somalia (OA)
¥ Somali National University, Mogadishu, Somalia (OA)

Qualifications / Designations
ϑ MD, MMed (Obstetrician and Gynecologist)
ξ Master of Medicine in Paediatrics (MMed)

Abstract

Lithopedion is a rare complication of abdominal pregnancy involving calcification and prolonged retention of a nonviable extrauterine fetus. We report a 45-year-old G9P8 woman with a gradually enlarging abdominal mass first noticed 6 months after her sixth delivery. Despite the mass, she subsequently had two live births. This case highlights 7-year lithopedion retention with preserved fertility and subsequent successful pregnancies, emphasizing the importance of early diagnosis and management of abdominal pregnancy in resource-limited settings.

Keywords: *abdominal pregnancy, calcified fetus, chronic abdominal mass, ectopic pregnancy, Lithopedion, Somalia*

*** Corresponding Author**
Dr. Abdirizak Ali Abdi

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EARLY

1. Introduction

The word lithopedion is derived from Greek words to refer to a fetus that has calcified or changed to bone. This condition was first described in the tenth century by Albucasis, a surgeon of the Arabic era of medicine [1]. It is often difficult to diagnose because symptoms can be nonspecific and may mimic other abdominal clinical conditions. Common symptoms include abdominal pain, vaginal bleeding, and gastrointestinal discomfort. Ultrasound imaging, CT and MRI can help in diagnosis [2]. The patient's age ranges from 30 to 100 years, while the duration of lithopedion retention ranges from 4 to 60 years [3]. Less than 300 cases have been reported in 400 years of world medical literature [4]. Within the formation of a calcified fetus a number of necessities should be present and there with define a true lithopedion: (1) Presence of an extrauterine pregnancy, most frequently intra-abdominally located; (2) Fetal demise after 3 months gestation, after this point the mineralization of the bones is rather advanced so that the fetus cannot be reabsorbed entirely by the mother; (3) A sterile environment; (4) Missed early diagnosis in order to gradually calcify over time and; (5) Local conditions for calcium precipitation, deposition and infiltration with subsequent dehydration of fetal tissue and/or membranes [5]. We present an interesting case of long-term persistence of lithopedion in a 45-year-old woman with fertility intact, who later underwent two vaginal births within seven years of lithopedion persistence.

2. Case presentation

A 45-year-old multiparous woman, gravida 9 para 8 (G9P8), was referred to the Department of Obstetrics and Gynecology at Banadir Hospital Mogadishu, Somalia, with a chief complaint of a progressively enlarging lower abdominal mass. At the age of fifteen, she reached menarche, and at seventeen, she got married. She stated that she had a regular menstrual cycle every 28 days, with bleeding lasting four to five days. She stated that after her prior pregnancies, her menstrual periods returned to normal. She denied ever using hormonal or other forms of birth control. Her family history, medical history, and surgery history were all unremarkable. She had eight prior vaginal births with the help of traditional birth attendants (TBAs), making her a great multiparous mother. She stated that about six months after the birth of her sixth child, she became aware of the lower abdominal bulge. She did not, however, seek medical attention or have imaging done at that time. On retrospective questioning, the patient did not recall any acute symptomatic episode of severe abdominal pain, vaginal bleeding, or false labor between her deliveries that might correspond to the demise of an advanced ectopic fetus. She went on to become pregnant and give birth to her seventh and eighth live children in spite of the mass.

Upon examination, a large, well-defined, firm, movable, non-tender infraumbilical mass that corresponded to a 38-week-sized gravid uterus was felt; there were no skin abnormalities, dilated superficial veins, or scars on the abdomen. Its origin and connection to neighboring structures were evaluated by bimanual examination (Figure 1: A, B, C).

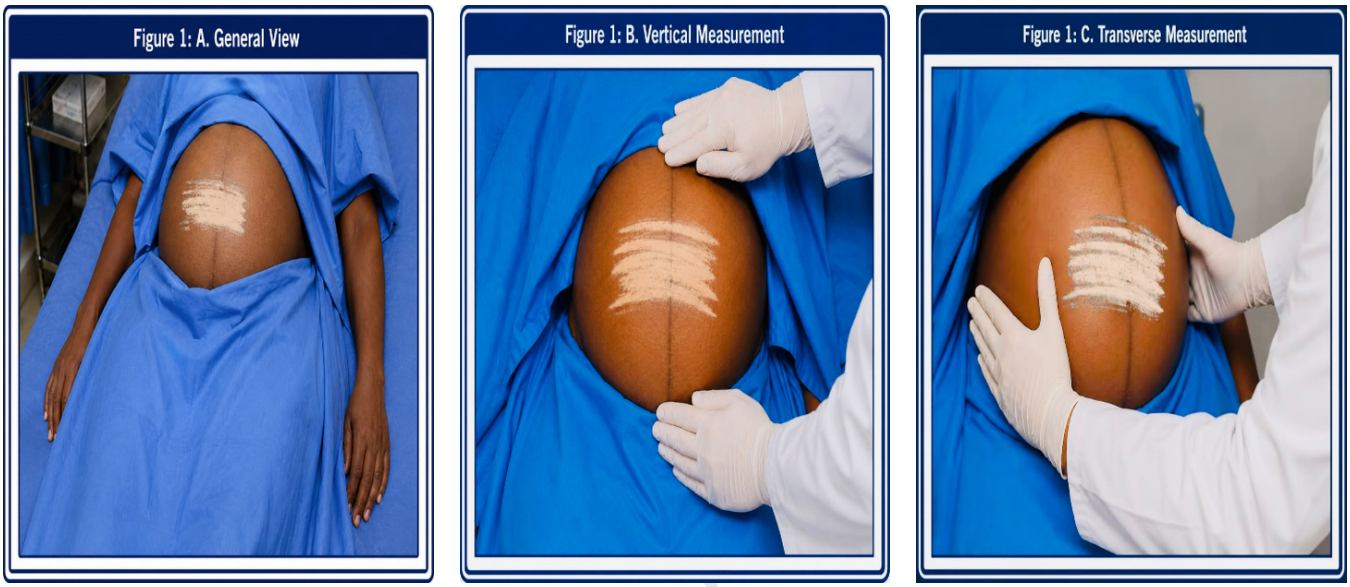


Figure 1. Clinical assessment and measurement of the abdominal mass. (A) General abdominal view demonstrating the infraumbilical mass. (B) Vertical measurement of the mass along the abdominal midline. (C) Transverse measurement across the widest diameter of the mass.

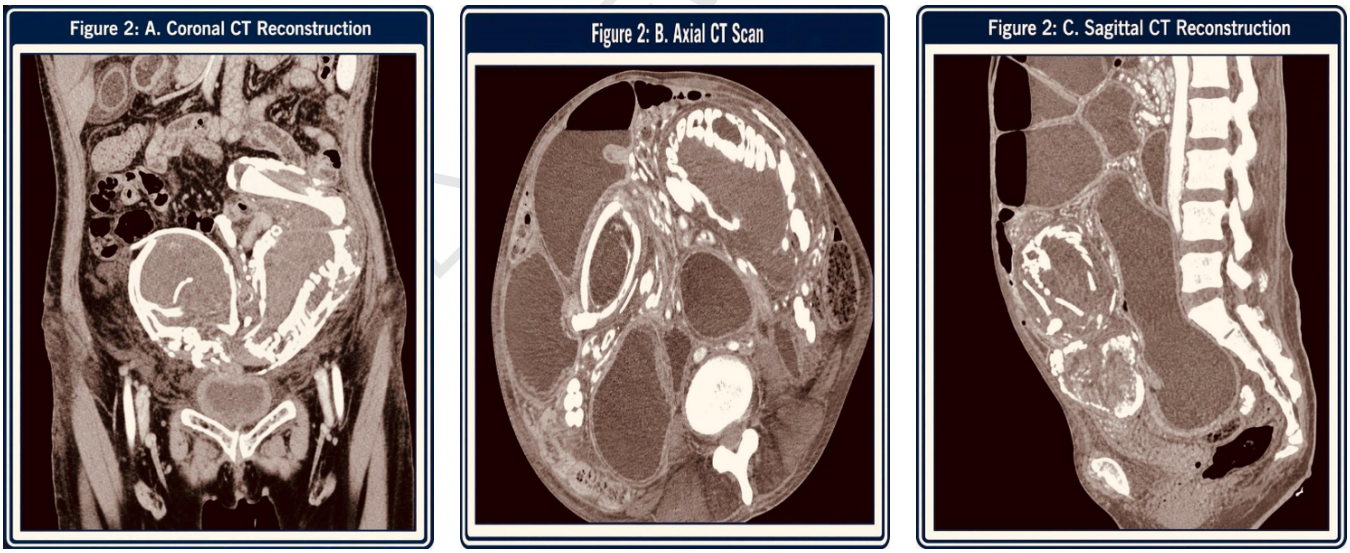


Figure 2. Computed tomography (CT) findings. (A) Coronal CT reconstruction demonstrating a large, well-defined abdominopelvic cystic lesion with internal calcified/osseous components and displacement of the adjacent abdominal and pelvic structures. (B) Axial contrast-enhanced CT image showing the cystic lesion and its internal calcified structures, with surrounding bowel and pelvic structures displaced by the mass. (C) Sagittal CT reconstruction demonstrating the craniocaudal extent of the lesion and its relationship to the uterus, pelvic organs, and adjacent structures.

The results from the lab were within typical bounds. A 9 × 7 × 7 cm well-defined calcified abdominopelvic mass with identifiable embryonic skeletal characteristics was visible on contrast-enhanced CT, representing the densely calcified core and contracted bony elements within the larger surrounding capsule. It was situated anteriorly and to the left of the uterine fundus, and there was no free fluid. The results of the ultrasound were not conclusive (Figure 2: A, B, C).

These results prompted an exploratory laparotomy and a tentative lithopedion diagnosis. An infraumbilical midline incision revealed a hard bony mass in the right adnexa that was covered by the omentum and bowel loops and supplied by the parietal peritoneum and omentum. The mass was encased in a thick membrane. The mass was entirely removed following meticulous dissection (Figure 3: A, B, C).

Upon gross examination, the fetus specimen was found to be brownish, desiccated, constricted, and hard. Its preserved morphology, including its head, trunk, and limbs, was consistent with dystrophic calcification and protracted retention. The sample was sent for histological analysis (Figure 4: A, B, C).

A well-formed fetal skeleton with noticeable fibrosis and dystrophic calcification was seen in an old ectopic gestational sac in the mesosalpinx, according to histopathology. Diagnostic uterine curettage was performed to rule out concurrent intrauterine pathology and evaluate endometrial changes; histopathological examination revealed localized suppurative inflammation and



Figure 3. Intraoperative findings of the calcified fetus (lithopedion). A: Intraoperative view demonstrating the calcified fetal mass during surgical removal. B: Gross intraoperative appearance of the preserved fetal structures, including the head, trunk, and extremities, within the calcified mass. C: Intraoperative appearance of the surrounding fibrous capsule after exposure of the calcified fetal mass.



Figure 4. Postoperative macroscopic appearance of the retained calcified fetus. A. Intraoperative appearance immediately after removal, showing a recognizable but discolored, contracted, and desiccated fetal specimen. B. Gross appearance of the removed fetus, showing preserved fetal morphology with marked discoloration, desiccation, and mummification. C. Gross appearance of the umbilical cord, showing marked discoloration and degenerative changes.

gestational endometrial alterations. 38–40 weeks of gestation was assessed by femur length (Figure 5: A, B, C).

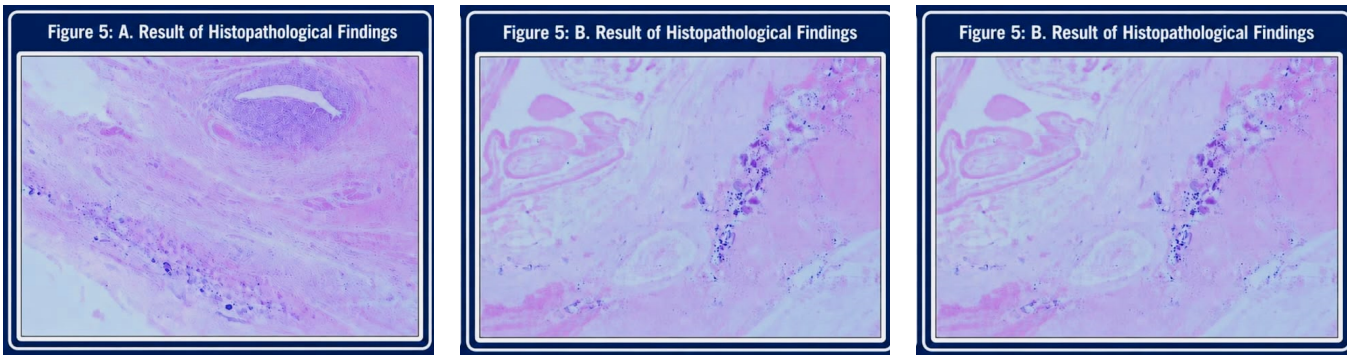


Figure 5. Histopathological findings of the calcified mass. (A) Fibrous wall with bony spicules on the inner side and attached omentum on the outer surface. (B) Fibrous tissue on the inner side of the cyst wall. (C) The cyst wall attached to the fallopian tubal surface. The tube shows chronic salpingitis.

3. Discussion

Lithopedion is a term derived from the Greek words which means Litho (Stone) and Paedion (child) and it explain an extra-uterine dead fetus that has developed calcified. It is a rare condition that was first described in the tenth century by Albucasis, a surgeon of the Arabic era of medicine [6]. Once the diagnosis of an advanced abdominal pregnancy is made, surgical intervention is necessary because of the high mortality and morbidity of the advanced pregnancy; in advanced, necrotic, or calcified abdominal pregnancies with fetal demise, methotrexate treatment is contraindicated because of the risk of sepsis, hemorrhage, and death, although methotrexate remains a recognized option in selected early, unruptured abdominal pregnancies with viable trophoblast [7].

Sometimes an abdominal pregnancy undergoes calcification instead of being absorbed, resulting in a lithopedion, but this is extremely rare and difficult to diagnose and manage. A lithopedion is sometimes detected as a palpable abdominal or pelvic mass on a routine physical examination, but most cases are incidentally found during surgery or on radiographic studies of the abdomen or pelvis [8]. In our patient, lithopedion was detected from the imaging performed for the evaluation of a longstanding pelvic mass. The retention for about 7 years probably happened after the patient's pregnancy that took place outside the uterus at a time when she delivered two living children. Healthcare delays and lack of accessibility to diagnostic facilities could probably be contributing factors in the case of prolonged retention of lithopedion.

Abdominal pregnancy mostly occurs due to rupture of tubal or ovarian ectopic pregnancy into the abdominal cavity. Both fetal and maternal prognosis is poor due to scarcity of blood supply to the fetus and intra-abdominal hemorrhages and sepsis in mother. If the placenta gets attached to the organ with avid blood supply, successful fetal outcome may be seen. The conditions which are essential for the formation of lithopedion are survival of the fetus for more than 3 months, a sterile environment, missed early diagnosis, and local conditions suitable for calcium precipitation and deposition. The incidence of abdominal pregnancy is related to the frequency of ectopic gestation in the population, educational and socioeconomic status of the patient, availability of health care services and their utilization [9]. Abdominal pregnancy is associated with a very high fetal and maternal morbidity and mortality. The reported maternal mortality is 0.5%–18% and perinatal mortality is approximately 95% attributed to preterm deliveries resulting from active intervention done in a majority of cases as soon as a diagnosis is arrived [10]. The importance for early management of abdominal pregnancy, especially in settings with limited resources, is highlighted by the fact that delayed identification and treatment led to lithopedion.

4. Conclusion

An uncommon consequence of undetected abdominal pregnancy, lithopedion can mimic a pelvic mass and persist for years. Late detection and calcification are often caused by inadequate diagnostic resources and delayed intervention. Healthcare providers and maternity workers, especially in low-resource settings, should maintain high clinical vigilance and consider routine ultrasound evaluation for patients presenting with persistent postpartum or long-standing abdominal masses.

Patient perspective

After the mass was removed, the patient expressed relief and contentment during the one-day postoperative follow-up. She had a satisfactory surgical incision, no postoperative pain, and continued to be clinically well at the 3- and 7-day follow-ups.

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