

Lithopedion

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Abstract: *Two cases of lithopedion were encountered. In one case, computerized tomographic (CT) findings are illustrated. There are no classical clinical signs or symptoms that aid in the diagnosis of this rare condition. A calcified fetus and investing membranes are readily identified on a plain film of the abdomen, and these constitute an absolute sign of lithopedion. Excretory urography, barium enema examination, ultrasound, and CT represent other diagnostic modalities in the evaluation of this condition, but they are rarely indicated or valuable.*

1. Introduction

Lithopedion is a word derived from the Greek words lithos, meaning stone, and peidion, meaning child, to describe a fetus that has become stony or petrified. **Lithopedion** is a rare complication of pregnancy which occurs when a fetus dies and becomes too large to be reabsorbed by the body. Lithopedion is a term designating an ectopic pregnancy that evolves to fetal death and calcification. It is a rare occurrence, its incidence being reported as 1.5–2.0% of all ectopic pregnancies, and the incidence of ectopic pregnancy is 0.3–1.0% of the totality of gestations. As a consequence, less than 300 cases have been described in the medical literature. However, many reported cases of lithopedion corresponded to cases of skeletonization or collections of fetal bone fragments discovered encysted in the pelvic region at surgery or autopsy. It is thus estimated that true lithopedion is a much rarer entity.

If on one side the incidence of ectopic pregnancy is raising due to an increase in pelvic inflammatory disease, tubal surgery and intra-uterine devices, on the other lithopedion formation should become rarer since there is nowadays an easier access to improved pre-natal care with a consequent possibility of an early diagnosis and treatment of patients.

2. Case Report

A 77-year-old female of poor socio-economical status was admitted to the emergency department of our hospital with a history of diffuse abdominal pain with an evolution of five days, associated with nausea, vomiting and constipation in the last two.

Her personal and family history was unremarkable. She was nulliparous and did not recall ever being pregnant.

Physical examination disclosed a huge incarcerated umbilical hernia. Bowel sounds were maintained outside the herniary formation.

Laboratory findings (blood counts, biochemical parameters, blood gases) were within normal limits.

An abdominal plain film was obtained in the supine position, both with vertical and tangential X-rays. It clearly showed the hernia with some air-containing bowel loops, and also a calcified heterogeneous mass in the mid-abdominal region (Fig. 1).

The hernia required urgent surgical correction (herniorrhaphy). It contained right and transverse colon, terminal ileum, epiploic fat and also the cecal appendix.

In an attempt to further characterize the calcified lesion, which was mistaken for a retroperitoneal mass during surgery, an abdominal and pelvic computed tomography (CT) examination was requested and performed two days after surgery, in a 4-row multidetector CT equipment (Bright Speed, GE Healthcare, US) using a non-enhanced acquisition protocol (slice thickness: 2.5 mm, pitch: 1.5, reconstruction intervals: 1.25 mm). It disclosed a lithopedion (calcified ectopic pregnancy), depicting in great detail the fetal anatomy, especially on tridimensional MIP reconstruction. The measurement of the femur length allowed determining that the gestation proceeded until the 30th week

There are three types of Lithopedion:

- 1) Lithokelyphos is a phenomenon where only the fetal membranes undergo calcification. This leaves the foetus itself effectively mummified. Thus, the foetus undergoes decomposition, while the surrounding calcified membranes protect the mother from the effects of the foetal necrosis.
- 2) Lithokelyphopedion exhibits calcification of both the fetal membrane and the foetus.
- 3) The Lithopedion proper, or Lithotecnon, is the most common form of abdominal pregnancy calcification where the foetus has either totally or partially escaped the membrane, and has calcified without it, or with a negligible remnant of it.

Symptoms

- Pelvic Pain,
- Abdominal Tenderness
- Compressive **symptoms** to the urinary bladder and rectum may occur,
- Asymptomatic

Complication

- Bladder or rectal perforation,
- Cecal volvulus,
- Intestinal or urinary obstruction
- Abscess formation.

3. Management

Management of these situations is difficult, since most cases remain asymptomatic and represent incidental findings on imaging studies, surgery or necropsy. An abdominal

radiograph is useful to suggest or confirm diagnosis. Computed tomography and magnetic resonance imaging are able to reach a conclusive diagnosis, and allow further characterization of the mass, help the diagnosis of adherence, define the involvement of adjacent structures and estimate the fetal gestational age by measuring the femoral length.

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