

# Abdominal lithopedion formation with 30 years of evolution: report of a case

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## Summary

The incidence of abdominal pregnancy is very rare, long-retained abdominal pregnancy undergoing fetal death and evolving to a lithopaedion is even more scarce. The authors report the case of a 60-year-old woman who discovered an abdominal mass 31 years ago that was recently identified intraoperatively as lithopaedion. Although imaging had revealed a low-level echogenic mass in the cavity, nobody had considered the possibility of a lithopaedion before the operation. The authors strongly suggest identifying the small skeletal frame through imaging that will be a very important preoperative sign that will lead to a diagnosis, otherwise neglected in the past years.

**Key words:** Abdominal lithopedion; Fetal death; Calcification.

## Introduction

Lithopaedion (stone baby) is the name given to an extrauterine pregnancy that evolves to fetal death and calcification. Litho means “stone” and pedion means “child”, hence the term lithopedion explains its pathomechanism. The authors report the case of a 60-year-old woman who discovered an abdominal mass 31 years ago and recently identified intraoperatively as lithopaedion.

## Case Report

A 60-year-old, gravidity 3, para 3, woman was admitted to the present hospital with complaint of an abdominal mass. She had a uterine-incision delivery in 1979 and had been menopausal for 31 years, when the abdominal mass was discovered in 1982. Physical examination revealed a hard mass sized in 10 x 8 cm in the right of the lower abdomen, with tenderness. The women had not complained of augmentation of the mass for years, which was accompanied with a weight sensation, and an aching in inferior belly and pars sacralis. She did not receive regular treatment until this hospitalization. Her pain was relieved after taking some medication. The abdominal X-ray and computerized tomography (Figure 1) showed the presence of an low-level echogenic mass in the right pelvic cavity (10.8 x 8.8 cm); teratoma and ectopic pregnancy were not excluded. Her gynecologic history included regular menstrual bleeding before menopause. The gynecologic examination revealed a solid, obscure activity mass in right adnexa, sized in 10 x 8 cm. The physical examination revealed slight tenderness but not rebound tenderness.

On gross pathologic examination, the mass showed as an oval tumor with a stony, hard calcified capsule. After cutting it, there were costal bone, cranium, limbs long bones and yellow muddy

fluid (Figure 2). After decalcification, the mass was sectioned and found to be composed of mummified tissues includes bones, muscles, skin, and cartilage, identified as a lithopedion (Figure 3).

## Discussion

Lithopedion is the result of an undiagnosed and untreated dead fetus in the abdominal. The dead fetus dries up and calcifies, which then generates a solid mass referred to as lithopaedion. The lithopedion can be retained decades of years (four to 60 years) in the maternal abdominal cavity. The age of patients on the date of diagnosis varied greatly from 23 to 100 years [1], often being older than 40 years. Fetal death occurs between the third month to full term of pregnancy which can then evolve into a lithopedion.

Lithopedions are generated within following specific conditions: (1) the pregnancy is extrauterine: includes tubal, ovarian, intra-abdominal, and horn pregnancies; (2) fetal death occurs after three months of pregnancy: if it occurs earlier than the third month while the fetal bones are cartilaginous, it will be absorbed completely; (3) fetal death is sterile: if it becomes infected then it will be absorbed; (4) fetal death is not diagnosed and treated on time; (5) local conditions exist for calcium precipitation and deposit [2, 3]. Then the fetal death will cause dehydration and calcification evolving into a lithopedion.

Lithopedion are classified into three subtypes according to the calcified position of the membranes and the

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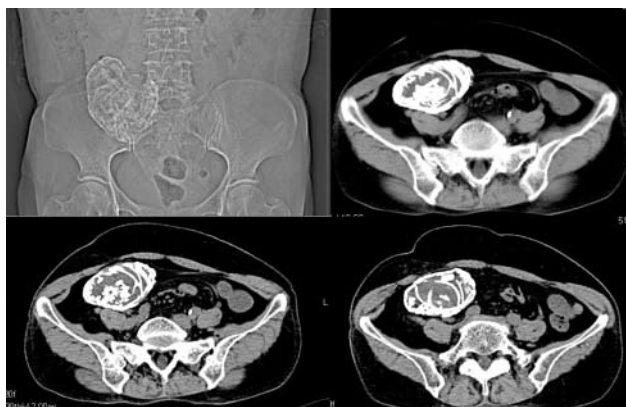


Figure 1. — Abdominal X-ray and computerized tomography showing a low-level echogenic mass in the right pelvic cavity.



Figure 2. — Gross pathologic examination showing an oval tumor with a stony, hard calcified capsule.

fetus [4]: (1) lithokelyphos: only the membranes are calcified; (2) lithokelyphopiedion: both the membranes and the fetus are calcified; (3) true lithopedion/lithotecnion: only the fetus is calcified. This latter subtype belongs to the first subtype since the lithopaedion has only calcified membranes.

In most cases the diagnosis of lithopedion is confused until an operation is performed. An ultrasound will reveal a low-level echogenic mass which will be diagnosed as ovarian tumours, myomas, inflammatory masses, epiploon calcifications, and urinary tract or bladder tumours. It is very difficult to diagnose lithopedion before operation since it often shows as mass in the abdomen. Although the clinical history will give some clues on its diagnosis, almost all reported cases were diagnosed only intraoperatively or postoperatively. In this case, after carefully studying the computerized tomography images, the authors discovered the skeletal frame of small size which could be clearly seen, especially the costal bones (Figure 1). This will be a very important sign for diagnosis before an operation is performed. Because both the lithokelyphopiedion and the true lithopedion types retain the fetal figure remarkable well by calcifying it, not to mention that the bones are dramatically well-preserved. As for the lithokelyphos type, which has only calcified membranes, the bones can also be well-preserved since bone substance is quite stable for many years after fetal death just as in the present case. This will also be a very important sign for a diagnosis before an operation is performed.

Most cases present with an asymptomatic evolution until it is occasionally found; some with a palpable abdominal or pelvic masses, may have weight sensation in the abdomen, pelvic pain, compressive urinary bladder, and rectal symptoms. The lithopedion retained in the ab-

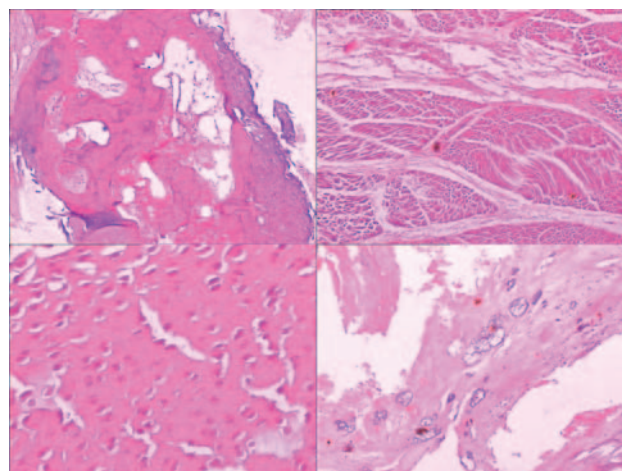


Figure 3. — HE staining showing the mass composed of mummified bones, muscles, skin, and cartilage (x100, x100, x200, and x200).

dominal cavity will cause complications such as intestinal adherence, intestinal obstruction, volvulus, stula formation, pelvic abscess, and some fetal parts can extrude into the abdominal wall, rectum or vagina [5, 6], and may cause rectal and urinary bladder perforations [2,7].

The most proper procedure of lithopedion is surgical removal, which is a simple procedure with mild bleeding, and can decrease or avoid possible future complications in elderly patients.

## References

- [1] Lachman N., Satyapal K.S., Kalideen J.M., Moodley T.R.: "Lithopedion: a case report". *Clin. Anat.*, 2001, 14, 52.

- [2] Frayer C.A., Hibbert M.L.: "Abdominal pregnancy in a 67-year-old woman undetected for 37 years. A case report". *J. Reprod. Med.*, 1999, 44, 633.
- [3] Spirtos N.M., Eisenkop S.M., Mishell D.R.: "Lithokelyphos: A case report and literature review". *J. Reprod. Med.*, 1987, 32, 43.
- [4] Cave P.: "Note on Lithopaedion". *Br. Med. J.*, 1937, 1, 383.
- [5] Mishra J.M., Behera T.K., Panda B.K., Sarangi K.: "Twin lithopaedions: a rare entity". *Singapore Med. J.*, 2007, 48, 866.
- [6] Jain T., Eckert L.O.: "Abdominal pregnancy with lithopedion formation presenting as a pelvic abscess". *Obstet. Gynecol.*, 2000, 96, 808.
- [7] Irick M.B., Kitsos C.N., O'Leary J.A.: "Therapeutic aspects in the management of a lithopedion". *Am. Surg.*, 1970, 36, 232.

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