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"BOILED EGG" IN THE PERITONEAL CAVITY -A RARE CASE REPORT OF GIANT PERITONEAL LOOSE BODY

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ABSTRACT
Peritoneal loose bodies (PLBs) are very rare benign intra-abdominal masses that arise from torsed, infarcted epiploic appendages. There have been few reports on peritoneal loose bodies in literature. Here we report a case of a large peritoneal loose body (LPLB) in a 63 year old female which was diagnosed in our institute after radiological and histopathological evaluation. USG, CT and MRI revealed a well circumscribed extra luminal mass lesion with central calcification. Pre-operative diagnosis of the lesion could not be made. However, final diagnosis of the case was confirmed after laparotomy and subsequent histopathological analysis of the specimen.

KEYWORDS: *Peritoneal loose body, Benign intra-abdominal mass, Torsed & infarcted epiploic appendages, Extraluminal mass lesion with central calcification*.

INTRODUCTION
Peritoneal loose bodies (PLBs) are very rare benign intra-abdominal masses of the peritoneal cavity.The most common causes of peritoneal loose body are thought to be torsion and separation of the appendices epiploicae by any means.[1] Peritoneal loose bodies are usually small, 0.5 - 2.5 cm in diameter. "Giant peritoneal loose bodies", larger than 5 cm, though uncommon can be presented with various symptoms, and are difficult to diagnose preoperatively.[2] These are commonly found in the pelvic cavity. Most of the lesions are diagnosed accidentally.[3,4]

CASE REPORT
A 63 year old female was presented with a painless mobile palpable mass in the abdomen for the last 6 months was referred to our department for radiological evaluation. On USG examination of the abdomen the lesion appeared as a well circumscribed hypoechoic mobile oval extraluminal mass lesion in the right iliac fossa region showing central calcification . The lesion is devoid of vascularity on colour Doppler study. A subsequent CT scan was done for further evaluation. On CT the lesion appeared well circumscribed soft tissue density lesion with central calcification showing no significant enhancement on post contrast study. Pre-operative diagnosis could not be made. Final diagnosis of the lesion was confirmed after laparotomy and subsequent histopathological analysis of the specimen. On gross inspection the lesion was large measuring approx. 5.4cm x 4.5 cm, whitish in colour and oval shaped with a soft to firm consistency resembling a 'boiled egg' appearance. The lesion was free from the omentum. The cut section of the specimen revealed a smooth peripheral laminated part and a central golden yellow discolouration with calcifications. Further histological examination of the lesion was done to confirm the diagnosis which showed architectural pattern of appendices epiploica with degenerative changes supported by calcification and hyalinisation.

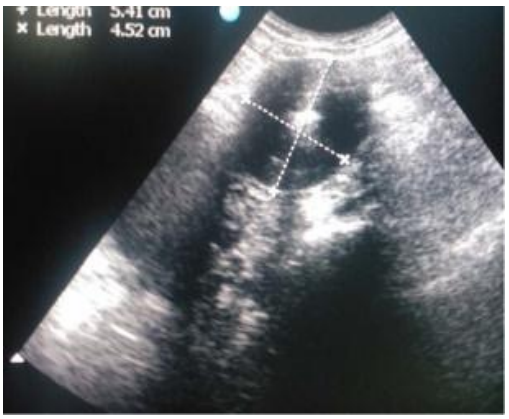

Fig 1: On USG a well circumscribed hypoechoic mobile oval extra luminal mass lesion, with central calcifications. The lesion is devoid of vascularity on colour Doppler study.

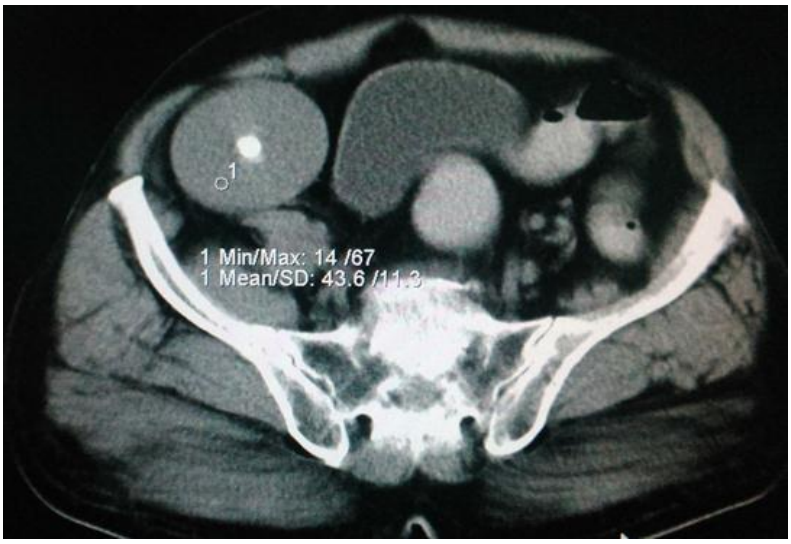

Fig 2: On NCCT axial image well circumscribed soft tissue density lesion with central calcifications. There is a distinct fat plane around the mass and it does not appear to originate from or invade any of the adjacent organs. No significant enhancement of the lesion.

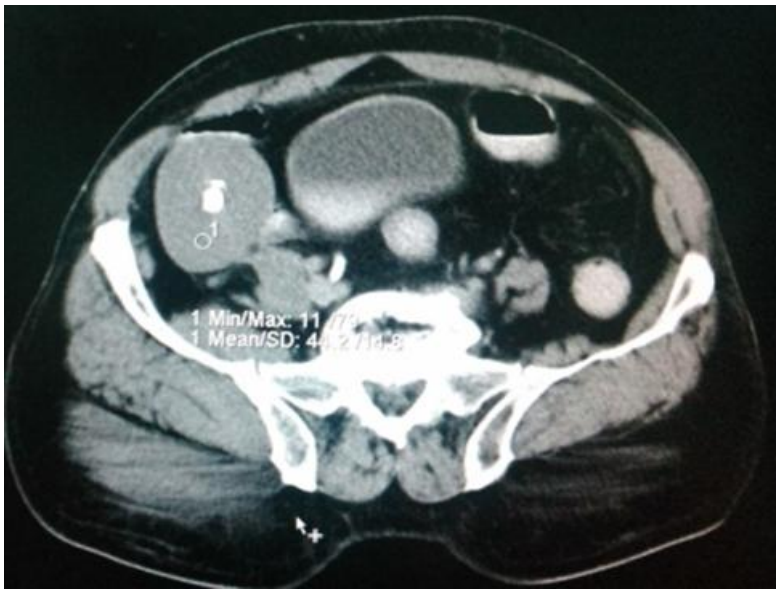

Fig 3: On CECT axial image no significant enhancement of the lesion.

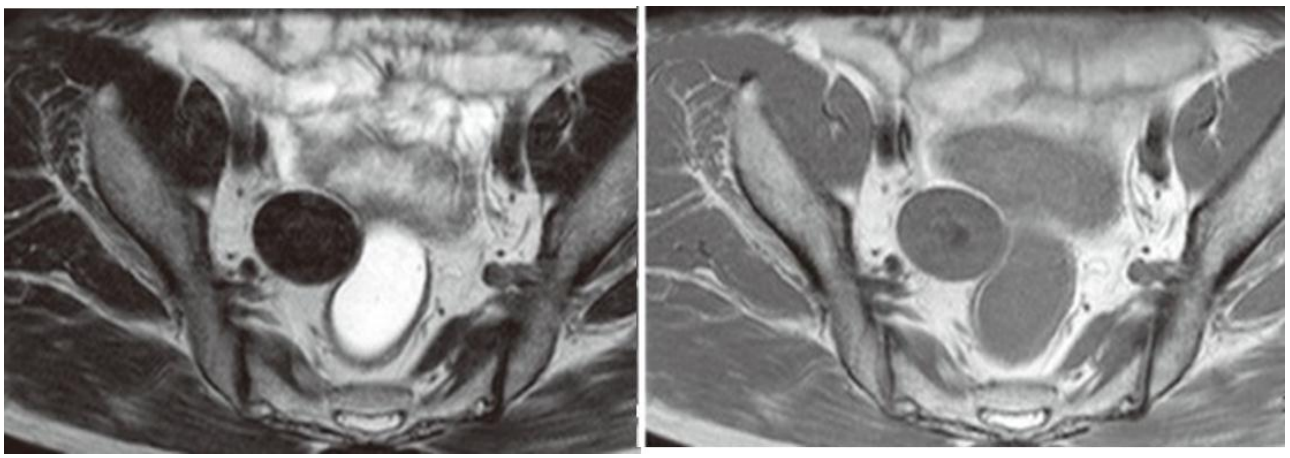

Fig 4: On MRI axial T2WI and T1WI images: well defined ovoid T2 hypointense and T1 isointense lesion with central hypointense area (calcification) in the pelvic cavity on right side. There is change in the position of the lesion is noted from RIF(in CT) into the pelvic cavity on the right side (in MRI).

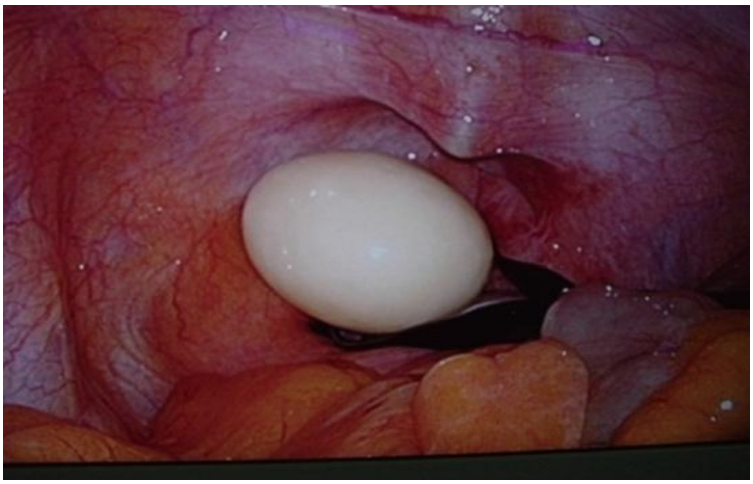

Fig 5: Gross specimen: "Boiled Egg Like" appearance of giant peritoneal loose body.

Fig 6: Cross section: Thread like appearance, the central core is filled with yellow cheese like material.

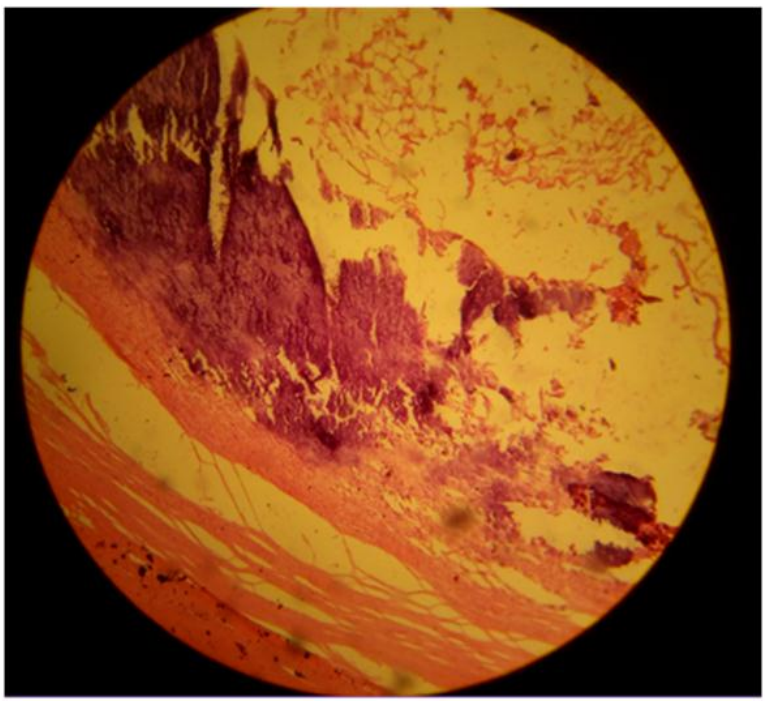

Fig 7: HPE shows necrotic fatty core surrounded by layers of acellular hyalinised collagenous fibrous tissue.

Differential Diagnosis

1. Peritoneal loose body.
2. Autoamputation of pedunculated subserosal leiomyoma.
3. Teratoma.
4. Ovarian neoplasm.
5. Intra-abdominal foreign body.

Final Diagnosis: "Giant peritoneal loose body" also known as "*peritoneal mice*".

DISCUSSION

Peritoneal loose bodies (PLBs) are benign intra-abdominal masses that arise from torsed, infarcted epiploic appendages. An infarcted epiploic appendage can become calcified and detached from the colonic serosa when its pedicle atrophies. These can then move freely within the peritoneal cavity and form a fibrous shell due to repeated exposure to peritoneal serum. PLBs are classically <2.5cm in diameter and macroscopically appear like egg- shaped white, hard, glistening concretion. Giant loose bodies which measure more than 5 cm are rare with only few reported cases in the literature.Often asymptomatic, may present with abdominal pain, rarely with acute urinary retention and small bowel obstruction.They have a smooth, firm surface texture and a fatty/proteinaceous core which may be calcified. On CTs and MRIs, large PLBs usually have a smooth ovoid outline with a soft-tissue shell and calcified and/or fatty core.

The key features of giant PLBs on imaging are[1,4]

- Φ Mobile nature:- PLBs change position on scans that are taken on separate occasions, or with different patient positioning.
- Φ Separation from surrounding organs:- PLBs move freely within the peritoneal cavity and are not attached to visceral organs. A distinct fat plane can sometimes be seen separating PLBs from surrounding structures.
- Φ Slow change in size:- PLBs only gradually increase in size over years.
- Φ Non-enhancing:- PLBs do not enhance with IV contrast.
- Φ No diffusion restriction:- On MR diffusion-weighted imaging, PLBs show no restriction. ØAt surgery, a loose peritoneal body is found, free-floating within the peritoneal cavity and has a characteristic appearance of an egg-shaped white, hard, glistening concretion.
- Φ Microscopic pathological findings include a core of necrotic, calcified fat laminated by layers of acellular hyalinised fibrous tissue.

CONCLUSION

A "GIANT PERITONEAL LOOSE BODY " is very rare and laparoscopic extraction is a useful technique for confirmation of diagnosis. To obtain a fast diagnosis and to perform adequate conservative or surgical management the knowledge of the rare entity of giant peritoneal loose body is necessary. The exact clinical examination and knowledge about the diagnostic radiological features are crucial.

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