A Rare Case of Bilobed Giant Peritoneal Loose Body

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PRESENTATION OF CASE

A 50-year-old male patient was referred to Department of Radiodiagnosis for evaluation of a longstanding intermittent abdominal pain associated with a palpable mass migrating in different quadrants of the abdomen and had gradually increased in size over last few years. The initial ultrasonographic (USG) evaluation revealed a well circumscribed bilobed hypoechoic pelvic solid space occupying lesion (SOL) with central calcific foci. Subsequent contrast enhanced computed tomography (CECT) imaging showed a 10.1 x 7.5 x 5.8 cm, bilobed non-enhancing pelvic mass with central dense calcific foci and concentric soft tissue layers of different attenuation. The mass was diagnosed to be a giant peritoneal loose body (gPLB) and confirmed by surgical exploration.

CLINICAL DIAGNOSIS

Our patient presented with increased severity of his long-standing intermittent dull aching abdominal pain in association with a migratory palpable lump in the belly being progressively larger in size over time. He also complained of intermittent increase in urinary frequency. The patient is a chronic alcoholic, with no clinical sign or laboratory finding of chronic liver disease. There was no h/o significant past systemic illness including chronic kidney disease (CKD). There was no past h/o acute abdomen or abdominal surgery as well. On palpation, an oblong shaped, firm, mobile intra-abdominal mass was found at the level of umbilicus in full bladder which comes down and gets stuck inside the pelvic cavity after voiding. It was associated with mild tenderness. No other clinical abnormality was detected.

An initial abdominal USG revealed a well-circumscribed bilobed hypoechoic pelvic solid SOL with central calcific foci. Subsequent CECT revealed a 10.1 x 7.5 x 5.8 cm bilobed or dumbbell shaped pelvic mass with central dense calcific foci and concentric soft tissue layers of different attenuation. The mass did not appear to originate from any adjacent organ and showed distinct fat plane with surrounding structures. Multiple enlarged calcified lymph nodes were noted scattered throughout the mesentery. Some of them got detached and remained freely in the peritoneal cavity of pelvis. Surprisingly the central calcified foci of the gPLB are very much similar looking with the detached calcified lymph nodes. A previous CECT abdomen with oral and IV contrast was done outside 4 months ago which showed similar findings with different orientation but of uncertain nature and origin.

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It was then measured to be 8.9 x 6.8 x 5.6 cm. On colonoscopy, no obvious intraluminal abnormality or external mass effect was found. Based on clinical sign, symptoms and imaging studies, we diagnosed it to be a bilobed gPLB with possibility of detached calcified lymph nodes acting as nidus in this particular case. On surgical exploration, it was found to be a glistening pearly white dumbbell shaped structure residing as completely free within peritoneal cavity of pelvis and thus confirmed our diagnosis. Multiple freely located enlarged lymph nodes were also removed. The post-operative period was uneventful and he was discharged after 7 days. On follow up check-up, he informed that all his related complaints resolved after surgical removal of the gPLB.

PATHOLOGICAL DISCUSSION

Peritoneal loose bodies (PLBs) or peritoneal mice or peritoneal hard-boiled eggs are rare asymptomatic lesions that are generally found as incidental finding during laparotomy or autopsy. In particular, giant PLBs measuring > 5 cm, are even more rare and only a few cases have been reported in literature to date.[1-5,7] They are usually present as freely located pearly white smooth glistening pea or egg-shaped intraperitoneal structures. Till date, their pathogenesis remains unclear but it is widely accepted that these loose bodies are derived from the epiploic appendices via sequential processes of torsion, infarction, saponification and calcification.[6] Then, they increase in size by accumulating albumin from exudative peritoneal fluid. In the pathological examination, they are shown to be made up of countless layers of fibrillar collagen with microcalcifications. As PLBs are rare findings and can cause diagnostic dilemma, therefore, clinicians particularly radiologists need to have high level of suspicion and should be familiar with its imaging findings.

Figure 1. 2D USG View of a Bilobed Hypoechoic Solid Mass Which Shows Echogenic Bright Centre with Posterior Shadowing and Peripheral Homogenous Hypoechoic Area with Smooth Surface. The Mass is Clearly Separated from the Bladder Wall.

Figure 2. No Internal Vascularity Noted in Colour Doppler Study

Figure 3. IV and Oral Contrast CT Scan Axial Image Shows a Bilobed Mass Consisting of Peripheral Soft Tissue and Central Dense Calcification with Distinct Fat Plane Separating the Mass from Adjacent Structures

Figure 4. The Mass Shows Relative Change in its Orientation on Subsequent CT after Four Months.

Figure 5. IV and Oral Contrast CT Scan Coronal Image Shows that the Mass Does Not Appear to Originate from or Invade any of the Adjacent Structures.

Figure 6. Again, the Mass Shows Relative Change in its Orientation on the Subsequent Imaging.

Figure 7. Sagittal CECT Image on Delayed Phase Shows the Mass is Sited in Between Posterior Wall of Urinary Bladder and Rectum Causing Compression on the Posterior Bladder Wall.

Figure 8. Axial Section Through the Base of the Bladder Shows Significant Indentation Over the Bladder Wall, Possibly Explains the Urinary Symptoms Felt by the Patient.

Figure 9 & 10. Gross Specimen after Surgical Removal Shows a Glossy Pearly White Smooth Dumbbell Shaped Structure Confirming the Diagnosis of gPLB

Figure 11 & 12. Few Specimens of Enlarged Calcified Lymph Nodes Which Were Found during the Surgery Located Freely within the Peritoneal Cavity. One of the Calcified Lymph Nodes (asterisk) was Noted between the Bladder and the gPLB in the Right Sided CECT Image

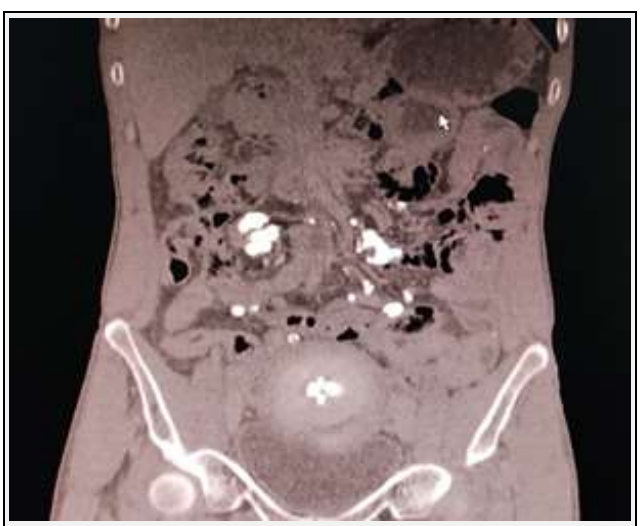

Figure 13. Coronal Image (Bone Window) CECT Shows Multiple Enlarged Densely Calcified Mesenteric Lymph Nodes

DISCUSSION OF MANAGEMENT

PLB is a rare clinical entity and occurrence of gPLB is rarer. Moreover, majority of the patients are asymptomatic and do not need any intervention[1]. But when they increase in size and specifically become gPLB (> 5cm), they cause chronic abdominal pain and sometimes complicate the case causing acute intestinal obstruction or urinary retention.[2,5,7] Therefore, clinical and radiological understanding is crucial to make a correct diagnosis and to make an appropriate choice between conservative or surgical management. Herein, our patient presented with his increasing chronic symptoms. Furthermore, there was a high chance of this case to get complicated as the mass was fairly large in size and got stuck in the pelvis. Here, our patient underwent laparotomy and removal of the mass without any complication. The post-operative period was uneventful and he was discharged after 7 days. On next check-up he informed that all his related complaints were resolved after surgical removal of this gPLB.

FINAL DIAGNOSIS

Based on clinical sign, symptoms and imaging studies, we diagnosed it to be a bilobed gPLB with detached calcified lymph nodes possibly acting as nidus in this particular case. And this was confirmed by surgical exploration as well.

DIFFERENTIAL DIAGNOSIS

As this is a very rare entity, possibilities of other mobile or calcified lesions in abdomen should be kept in mind, like-

- Foreign body calcification: Previous history of abdominal trauma or surgery must be excluded.
- Nodal calcification: Prior tuberculosis infection is common cause of lymph node calcification and should be kept in mind as in this case
- Teratoma: Main features are presence of soft tissue component of two or three germ line and identifiable origin or attachment with a surrounding tissue. Specific feature to have central calcified nidus with smooth layering of soft tissue will be absent.
- Faecolith: Purely intraluminal in bowel.
- Gallstone: Features of gallstone ileus or gall bladder perforation are present.
- Calcified uterine leiomyoma: In female patient, PLB must be differentiated from it. Clinical features of abnormal uterine bleeding (AUB) and imaging signs of heterogenous calcified soft tissue SOL of uterine origin would be present.
- Peritoneal calcifying fibrous pseudotumor: Rare benign fibroblastic tumour is found in skin, neck, pleura and sometimes in abdominal cavity. It represents IgG4 related disease.[8] It is partially calcified mass with some contrast enhancement which progresses on delayed images.

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Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.

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