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MOREL-LAVALLEE LESION OF LUMBAR REGION

Radiodiagnosis

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ABSTRACT

Morel-Lavallee lesion is a closed degloving injury characterized by post-traumatic separation of subcutaneous fat plane form underlying fascia, & thus created potential space being filled by fluid & debris of varying nature. Though originally described in the thigh, it has also been described in other anatomical sites including lumbar region. The lesion usually presents as compressible/fluctuant swelling at traumatic site. Most of patients present few days to few weeks after injury. However, patients with ignored slow growing painless lesions may present with long standing mass like lesions which may need open surgical intervention. Here, we present a case of long standing Morel-Lavallee lesion of lumbar region in a patient from remote village.

KEYWORDS

MLL - Morel-Lavallee Lesion

Introduction

Morel-Lavallee lesion is a post-traumatic lesion, resulting from traumatic separation of skin & subcutaneous plane from underlying fascia & thus created potential space being filled with blood, serosanguinous fluid or fat, or combination of these. Shear injuries lead to disruption of capillaries & lymphatics, with accumulation of leaking blood/fluid in potential space. The lesion is of variable size, ranging from few cms to large mass like lesion. The larger, usually long Standing, lesions tend to have well defined capsule. The lesions are categorized as soft tissue degloving injuries. The most common site is proximal thigh (especially greater trochanter region). However, lesions have been also reported in other regions of body like lumbar & scapular region. MRI is imaging modality of choice for characterization of lesion. Treatment options include aspiration & compression bandage, aspiration & sclerotherapy, & open surgical intervention depending on size & age of lesion.

Case Report

Here we are presenting a case of lumbar Morel-Lavallee lesion, in a 28 year, male patient. The patient presented to cancer awareness camp at our institution, with a large superficial lump in his lumbar region. Patient also gave history of trauma to his back four years prior. In view of soft & compressible nature of lesion possibilities of cystic lesion & lipoma were considered. Patient was referred to department of radiodiagnosis for further work up. Patient was evaluated with conventional radiography, ultrasound & MRI, & finally final needle aspiration was also done. Cytological evaluation of aspirate did not reveal any suspicious cell.

AP & lateral radiographs of lumbosacral spine revealed a large well defined subcutaneous dense soft tissue mass like lesion in lumbar region. However, lumbosacral spine was grossly normal. There was no evidence of fracture or spondylolisthesis.

USG revealed a large well defined subcutaneous cystic lesion with thick walls, internal echoes & debris. There was no intralesional vascularity. Underlying paraspinal muscles appeared grossly normal in morphology & echopattern, however lying in close apposition to lesion. However, to rule out any communication with spinal canal MRI was requested & done.

On MRI, the lesion appeared as well defined subcutaneous mass like lesion appearing hyperintnse on T1WI (non-fat suppressesd & fat suppressesd), T2WI & STIR as well, suggestive of haemorrhagic contents. The lesion was having well defined low signal intensity thick walls. There was no communication with spinal canal. Diagnosis of encapsulated chronic subcutaneous hematoma/Morel-Lavallee Lesion was considered. Fine needle aspiration of lesion yielded serosanguinous fluid, confirming diagnosis. Patient was referred to surgical facility for further management.

Discussion

Morel-Lavellee lesion was first described in 1853 by French physician Maurice Morel-Lavallee. Initially term Morel-Lavellee lesion was used for proximal thigh lesions. Similar lesions have been also reported in other locations such as knee, lumbar & scapular region. Morel-Lavelle lesions are categorized as deep degloving injuries resulting from collection of blood, lymph or necrotic fat in potential space between hypodermis & fascia 2,3,6,7.

History of trauma is important in making diagnosis as Morel-Lavelle lesion. In absence of such history, lesion may be diagnosed as other type of fluid collection, eg. coagulopathy related hematoma. Radiological appearances of Morel-lavelle lesion have been described in literature. On radiograph, the lesions may be seen as superficial soft tissue mass like lesion (6). On USG, the lesions range from hypo- to anechoic pattern. Internal echoes, fat, and septa may be seen (2). On CT the lesions have appearance of fluid collection ranging from blood to simple fluid attenuation with or without foci of fat attenuation (7). On MRI appearance is variable, depending age of lesion. Mellado et al (2) described three different patterns of long standing MLL on MRI. First, as the lesion evolves from an acute state, deoxyhemoglobin is converted into methemoglobin, resulting in intermediate to slightly increased T1 signal. As the red blood cells undergo lysis, the MLL takes on a more homogeneous T1 hypointense and T2 hyperintense appearance, similar to that of a seroma. A third pattern of longstanding MLL includes variable signal intensity on T1 and heterogeneous hyperintensity on T2WI, with variable patchy enhancement following contrast administration. The lesion often appears well-circumscribed and ovoid. MLL can also develop a fibrous pseudocapsule appearing hypointense on T1WI and T2WI. Some long standing lesions may also appear hyperintense on both T1WI & T2WI (1,2,7).

Smaller lesions are usually managed by percutaneous aspiration and compression bandage. Larger lesions can be managed with percutaneous drainage & sclerotherapy. Long standing larger lesions tend to be encapsulated and usually need complete surgical excision to prevent recurrence (4,5). Lesion in our case was large and well encapsulated with thick walls, hence patient was referred for surgical management.

Conclusion

In patients with history of old trauma and presenting with gradually enlarging compressible superficial swelling at site of impact, possibility of long standing Morel-Lavallee lesion should be considered.. Long standing MLLs appear as cystic lesions on USG, and as cystic lesions or encapsulated fluid collection with varying signal pattern on MRI (including hyperintense appearance on T1, T2 & fat suppressed sequences as in our case).

Figure Legends

Figure 1 – USG images show large well defined subcutaneous cystic lesion with internal echoes & debris.

Figure 2 – AP & Lateral radiographs of lumbar spine show soft tissue density mass like lesion in lumbar region posterior to spine.

Figure 3 A to E (A – T2 transverse, B – STIR transverse, C – T1 transverse, D – T1 sagtransverse, E – T2 sag) – All MR Images reveal lesion to be hyperintense with thick low signal intensity capsule s/o

haemorrhagic contents. Fig 3A & E, obtained with patient in supine position, show compressible nature of lesion. Rest of images were obtained, with patient in prone position. MR images also show absence of any communication with lumbar spinal canal.

Fig 4 – Serosanguinous aspirate from lesion.

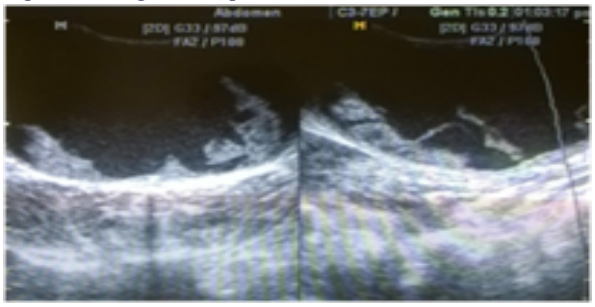


Figure-1

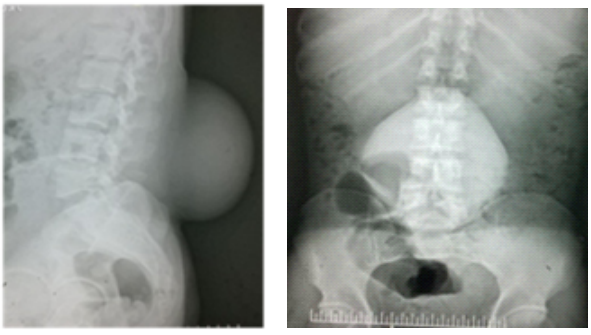


Figure-2

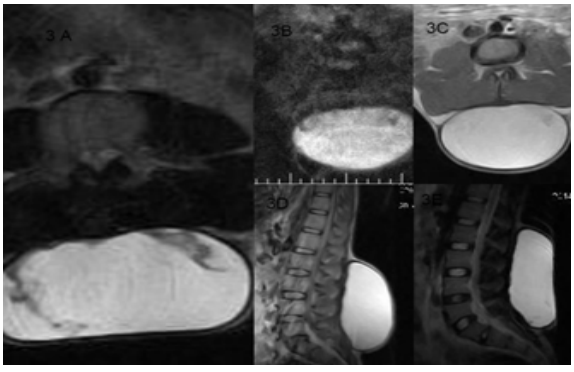


Figure-3



Figure-4

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