MOREL-LAVALLÈE LESION: HOW POCUS CHANGE PATIENT'S DISPOSITION

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Introduction

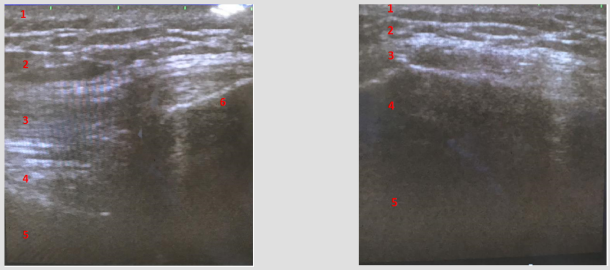
The Morel-Lavallèe lesion is an atypical cause of knee pain following trauma. It is a closed degloving injury between the hypodermis and underlying fascia caused by shearing or crushing forces. Diagnosis might be missed or delayed, as the diagnosis is rare. Here we are reporting a case of Morel-Lavallèe lesion of the knee that has been missed during previous 2 visits to medical facilities.

Case Report

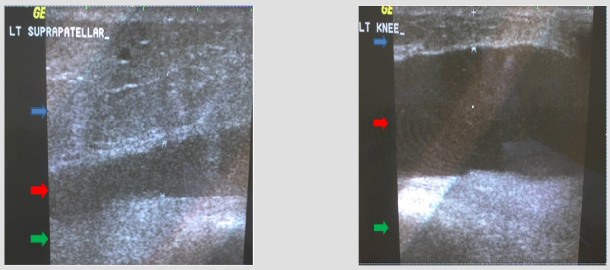
A 20 years old obese gentleman presented to our district emergency department with worsening left knee swelling and pain following road traffic accident, one week prior to this current presentation. He already visits other healthcare facilities twice, where x-ray was done which was negative for fracture. During previous 2 visits, he was discharged with analgesic and given nearest orthopaedic follow-up.

During this current presentation, his left knee was swollen with tenderness all over especially at the pre-patellar area. Repeated x-ray shows no obvious fracture. Bedside point of care ultrasound (POCUS) was done which show large collection within the subcutaneous layer in pre-patellar region. The patient was diagnosed as Morel-Lavallèe lesion (internal degloving of the left knee), referred to orthopaedic tertiary centre for admission and further evaluation.

During the course of admission for more than 2 weeks, the lesion further expand up to the thigh and becomes infected, in which he underwent surgical operation twice. First operation for evacuation of infected lesion and second operation for wound debridement and secondary suturing. He was discharged well afterwards. During follow up at orthopaedic clinic one week later, he able to ambulate which he regain full range of motion of his left knee.



Bedside ultrasound of knee of a normal patient (longitudinal and transverse respectively)
1 - Skin
2 - Subcutaeous fascia
3 - Muscle (Quadriceps muscle and tendon)
4 - Infrapatellar fat pad
5 - Shaft of femur
6 - Patella



Bedside point of care ultrasound (POCUS) of left knee of this patient (longitudinal and transverse respectively) showing large collection within the subcutaneous layer in pre-patellar region, with deepest pool of fluid ~ 1.8cm
- Blue arrow : superficial fascia
- Red arrow : haemolymphatic collection
- Green arrow : deep fascia

Discussion

Morel-Lavallèe lesion was first described by a French physician, Victor-Auguste-Francois Morel-Lavallèe back in 1863. It is a closed degloving injury caused by tangential forces onto the skeletal soft tissue causing separation of subdermal fat from the superficial fascia. Subsequently, the injured vasculature and lymphatic within the hypodermis will cause blood, serosanguinous fluid and necrotic fat drain into this potential space created between these 2 layers. Inflammatory and metabolic products contained in this fluid potentiate cellular permeability and further leakage from the vessels and lymphatics into the created space. It is hypothesized that this self-perpetuating cycle is the reason for the continued growth and development like in this case.

Diagnosis of Morel-Lavallèe lesion can be challenging, especially in the knee region where the most common location for this lesion are thigh and pelvis. Magnetic resonance imaging would be the imaging modality of choice, but still like in this case, ultrasonography also can be done to diagnose the lesion. Delay in diagnosis can lead to many complications, such as infection, pseudocyst and cosmetic defect.

Image showing obvious gross swelling of left knee comparing with the right knee.

Repeated xray of left knee which shows no evidence of fracture.

Image showing probe position (longitudinal and transverse respectively) during knee ultrasound with the knee slight flex 30 degree.

Conclusion

Awareness of the diagnosis of Morel-Lavallèe lesion by emergency physician is crucial in the differential diagnosis of traumatic knee pain as delay in diagnosis might lead to further morbidity and mortality.

References

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