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Post total hip arthroplasty pseudo- tumour – A rare case report.

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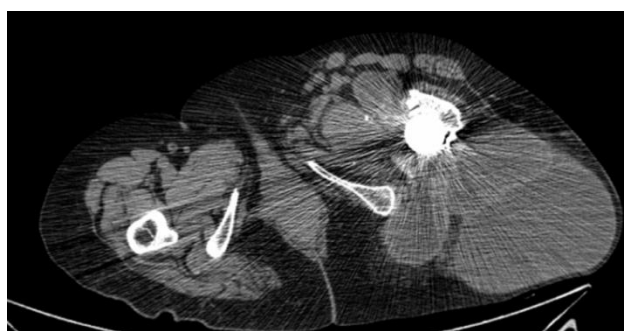
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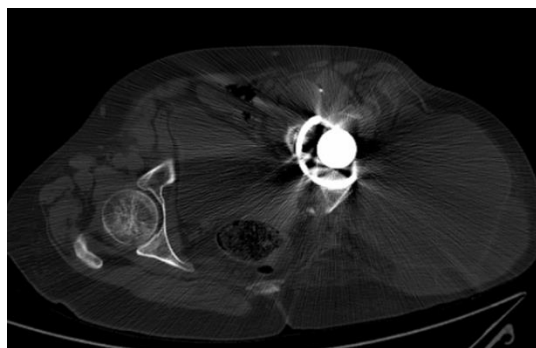
Clinical history: A 62-year-old female came with complaints of slow growing mass in the left hip region for 4-5 months, associated with dull aching pain. Range of movements were restricted due to pain and mass. She underwent Total Hip arthroplasty (THA) 11 months ago.



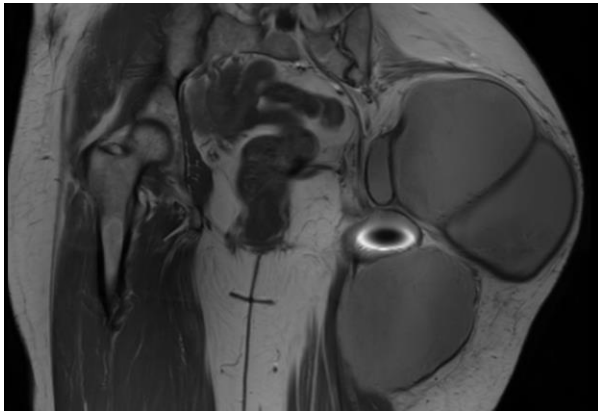
1. CT Topogram shows metallic implant with soft tissue dense swelling adjacent to it (arrow).



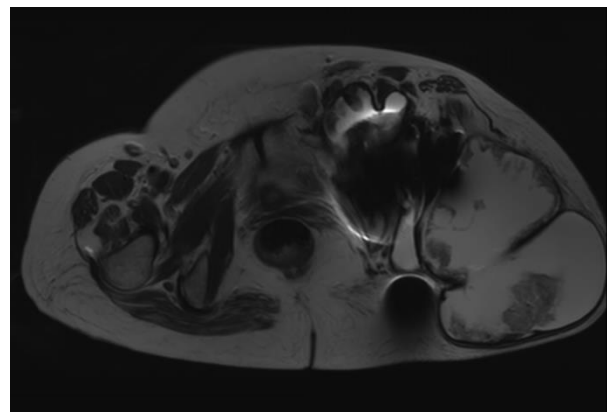
2. NCCT axial image (soft tissue window) of hip- shows THA implant with multi-loculated fluid density lesion.



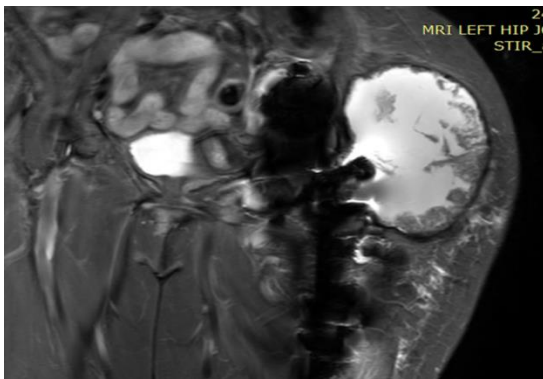
3. NCCT axial image (bone window) of hip shows THA implant with multi-loculated fluid density lesion.



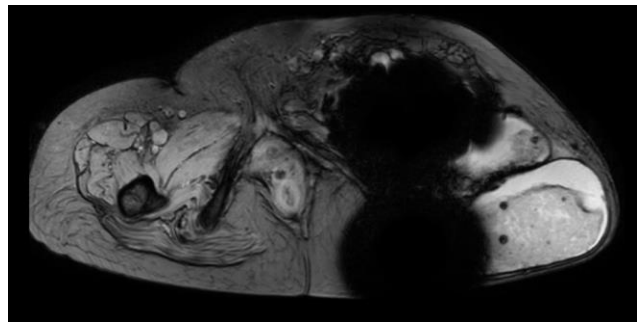
4. MRI T1-Coronal image of hip shows multi loculated T1 hyperintense cystic lesion with hypointense rim noted in post THA site.



5. MRI T2WI coronal image of hip shows expansion of the pseudo-capsule resulting in multiloculated cystic lesion with homogeneous hyperintense fluid and internal T2 hypointense synovial proliferations.



6. MRI Coronal STIR image of hip shows hypointense synovial proliferations and debris around the left prosthetic hip joint.



7. MRI Axial FFE image of hip shows few foci of blooming within the lesion—Metallic deposits.

Final diagnosis: The patient was diagnosed with post THA pseudo tumour of hip.

Discussion:

Epidemiology: Hip arthroplasty has become the standard treatment for end stage hip disease. The incidence of pseudotumors is increased in recent past owing to increasing numbers of hip arthroplasty procedures. Adverse reaction to metal is associated with the development of cystic or solid periprosthetic pseudotumors¹. Pseudotumors are often discordant with the patient symptom². Females have slight predilection compared to males.

Etiopathogenesis:

The etiology of inflammatory pseudotumors still remains unknown, but it seems to be associated with a hypersensitivity reaction against metal and/or cytotoxic effect resulting from metal particles released by the prosthesis. Adverse local tissue reaction is an umbrella term describing reactions to arthroplasty-related metal products, including metallosis caused by metal debris, reactive tissue inflammation caused by metal ions and corrosion products, or combinations. Adverse local tissue reaction with features of hypersensitivity has been associated with low metal wear rates, whereas metallosis is usually found with high wear rates, but both conditions may coexist¹. Adverse local tissue reaction can result in aggressive soft-tissue destruction, and therefore early diagnosis and assessment of disease severity are essential for appropriate timing of revision surgery, to avoid the poor outcomes associated with irreparable tissue damage².

Clinical presentation:

Most of the cases remain asymptomatic. Pseudotumor is often discordant with the patient symptoms. The most common presenting symptom is discomfort, either in the groin, on the lateral aspect of the hip or in the buttock². Patients may have vague pain at the operated site. Range of movements may be restricted due to pain/ mass effect.

Imaging:

- The location is very characteristic, always adjacent to the prosthesis and generally related to the surgical route¹.
- MRI is the preferred modality of choice as other modalities may fail to detect or assess the severity of complications¹.
- Pseudotumors have a variable appearance on MRI . Imaging appearance may range from discrete thin-walled cystic lesions to ill-defined solid masses, often associated with synovial thickening, surrounding fluid, and/or scattered debris. Disruption of the pseudo capsule is common. Metal artifacts in MRI can be minimized with the use of “large bandwidth” techniques, Fast spin-echo (SE) sequence instead of gradient-echo sequences and by using 1.5T instead of 3T MRI¹.

Treatment:

Revision surgery is the treatment of choice

Teaching points:

- Swelling in hip region post THA should raise the suspicion of Pseudotumor of hip.
- MRI is the investigation of choice; appropriate timing of revision surgery plays a key role in prognosis.

References:

1. Fritz J, Lurie B, Miller TT, Potter HG. MR imaging of hip arthroplasty implants. Radiographics. 2014 Jul;34(4):E106-32.
2. Davis DL, Morrison JJ. Hip arthroplasty pseudotumors: pathogenesis, imaging, and clinical decision making. Journal of clinical imaging science. 2016;6.