

**Anterior Thigh pain after Total Hip Arthroplasty (THA): Atypical case**Dr.Saurabh Agarwal<sup>1</sup>, Dr. Jitesh Jain<sup>2</sup>, Dr. Rajeev K Sharma<sup>3</sup>**ABSTRACT**

**Background:** Anterior thigh pain after THA is a common reason for discomfort to many patients. Its etiology ranges from shape and metallurgy used in the making of femoral stem, poor surgical technique leading to loosening of stem to subclinical infection. **Brief History of Case Report:** 40 years old female presented with pain over right hip for 10 years. Clinical and radiological evaluation pointed towards Osteo-arthritis for which Uncemented THA was done. Patient was pain free for 1 year after which she started having pain over proximal part of right anterior thigh. Patient was thoroughly investigated to rule out all possible causes of anterior thigh pain after THA but no diagnosis could be made. Later PET CT was done which showed metabolically active lesion involving the muscles in the right hip region. Open biopsy confirmed it to be a case of well differentiated Fibrosarcoma. **Conclusion:** PET Scan is not generally used to diagnosis the cause of anterior thigh pain after THA. In this case PET Scan was done as a desperate measure which helped us reach the final diagnosis.

Keywords: Arthroplasty, Positron Emission Tomography (PET) Scan

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**INTRODUCTION**

Thigh pain after total hip arthroplasty (THA) has been related exclusively to cement less stems. It has been reported to be associated

with loose femoral stem mostly but many reports have shown it in patients with well-fixed and aligned implants<sup>1,2</sup>. Incidences of

post THA thigh pain has been reported in various reports to be 4% to 22 %<sup>3,4</sup>.

Whenever we think of anterior thigh pain after THA, shape of femoral stem, alloy of implant, distal press fitting, loosening of stem or subclinical periprosthetic infection strikes our mind. Here we are presenting a case report of post THA thigh pain which we evaluated on the line of same issues mentioned above but did not get any contributing factor. Senior author (RKS) then suggested PET-CT of the patient and the result shocked us as well as the patient.

### **CASE REPORT**

A 40 years old female presented to us with complains of pain in Right Hip for 10 years with difficulty in walking. Pre-operatively Roentgenogram of Pelvis and

Right Hip were done, and on the basis of Clinical and radio-graphical evaluation the diagnosis of Osteo-arthritis was made.

Uncemented large diameter head total hip arthroplasty (Stryker; Metal on Poly) right side was done in January 2012. After the surgery the patient was relieved of her right hip pain. After 1 year of surgery patient started having pain over the antero-lateral aspect of right thigh. Patient was managed conservatively. All relevant investigations to rule out causes of post THA thigh pain were done, but all were inconclusive. Routine blood investigations were normal except raised ESR and CRP. X ray of right hip (1.5 year follow-up) showed adequately aligned and well-fixed implant (Figure 1).



Figure 1- 1.5 year follow-up of right total hip arthroplasty.

Local examination of thigh did not show any contributory sign. With conservative treatment she did not get relief. We were indecisive for next course of action until senior author ordered PET-CT. Report of

PET CT was alarming and showed metabolically active lesion seen involving the muscles in the right hip joint region (Figure 2).

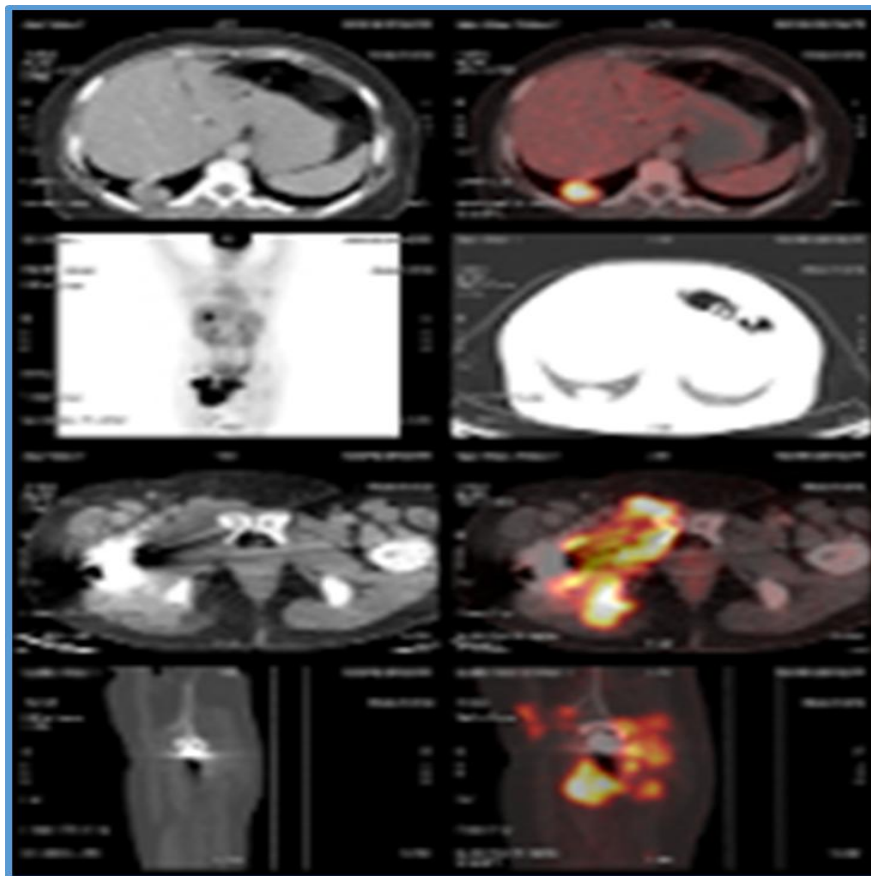


Figure 2 - PET-CT of right thigh showing increased FDG uptake seen in the centrally hypodense lesion involving the right oblique muscles in the pelvic region.

Increased FDG uptake seen in the centrally hypodense lesion involving the right oblique muscles in the pelvic region. Open biopsy was done in June 2014 which showed a well differentiated Fibrosarcoma involving the right pelvis and thigh muscles (Figure2). Patient was put on 4 cycles of

radiotherapy after consultation with Medical oncologist. Patient was relieved of her thigh pain after 1<sup>st</sup> cycle of radiotherapy.

**DISCUSSION**

There are a number of causes of Anterior thigh pain post THA mentioned in the Literature. Most common of which is

Mal-alignment of the Femoral stem or loose uncemented femoral stem hitting the antero-lateral cortex of the femur. Post-operative X-rays of the femur shows well aligned femoral stem. No evidence of any stress fracture noted. Next etiology could be subclinical periprosthetic infection. Patient was thoroughly investigated for that. All blood parameters were serially recorded to look for any pattern which include Complete blood counts, Erythrocyte Sedimentation rate and CRP, but they were inconclusive.

Her serial X-rays were closely monitored for any signs of radiolucency, osteolysis or loosening. X-rays were also assessed to check the Acetabular Antiversion. Excessive acetabular anteversion can cause mechanical impingement of the neck of the femoral component leading to thigh pain. Other rare cause of anterior thigh

pain could be Regional Sciatica i.e. entrapment of the sciatic nerve in the scar tissue, but this was dull boring anterolateral thigh pain not fitting into pattern of sciatic radiculopathy. We were indecisive for the next step to clinch the diagnosis when the PET-CT was suggested by senior author and report of which was suggestive of sarcoma of right thigh muscles.

Since the 1<sup>st</sup> report of malignant fibrous histiocytoma<sup>5</sup> many authors have reported varying incidence of cancer in association of Total Hip Arthroplasty<sup>6-8</sup>. Is there any association between metal on metal or Metal on polyethylene THA and cancer? This question is a matter of debate and cannot be conclusively answered based on these reports. Metal on metal (MOM) Total hip Arthroplasty is associated with metal debris in the surrounding tissues leading to inflammatory debris and

formation of Pseudotumors. These pseudotumors on excision biopsy are not associated with either infection or malignancy. MOM THA has also been known to cause elevated serum metal ions levels.

Many studies published recently have denied any association between cancer and primary Total Hip Arthroplasty<sup>9-11</sup>. Aim of this case report is not raising the issue of association of cancer with primary Total Hip Arthroplasty. Fibrosarcoma involving the right pelvis and thigh muscles is a rare diagnosis to be made as an etiology of anterior thigh pain post THA. After 6 months of meticulous investigations and examinations the patient was losing hope and confidence in us and lateral thinking of senior author did well in clinching the diagnosis.

### **CONCLUSION**

Anterior thigh pain after THA is a common cause of discomfort to the patient. A number of causes have been mentioned in literature. A battery of investigations is required to reach to a definite conclusion. At times final diagnosis could not be made, adding to the sufferings of both patient and surgeon. PET Scan is not generally used to diagnosis the cause of anterior thigh pain after THA. In this case PET Scan was done as a desperate measure which helped us reach the final diagnosis.

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