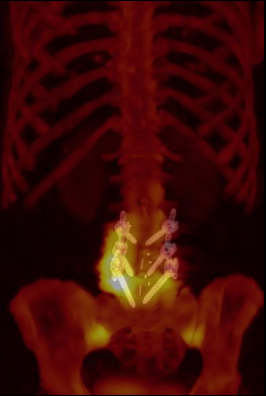


xSPECT Bone case highlights

Highlighted cases



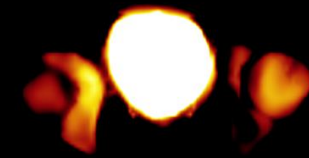
Evaluation of screw loosening



Loosening of hip prosthesis



Tarsal osteoarthritis



Early diagnosis of acetabular
osteomyelitis

Evaluation of lumbar vertebral fixation screw loosening with xSPECT Bone for improved localization of pathology

^{99m}Tc -MDP bone SPECT/CT study demonstrating loosening of left lower fixation screw in a patient with lumbar spine fusion. Sharper delineation and higher contrast of periprosthetic uptake with xSPECT Bone™ improved visual clarity for the localization of the site of loosening.

[Click here to read case 1](#)

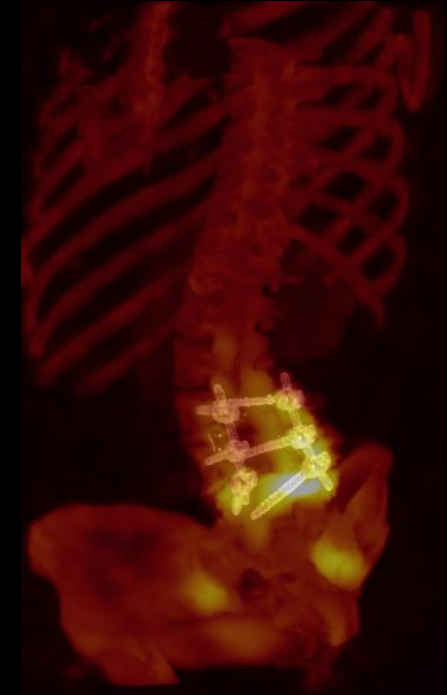
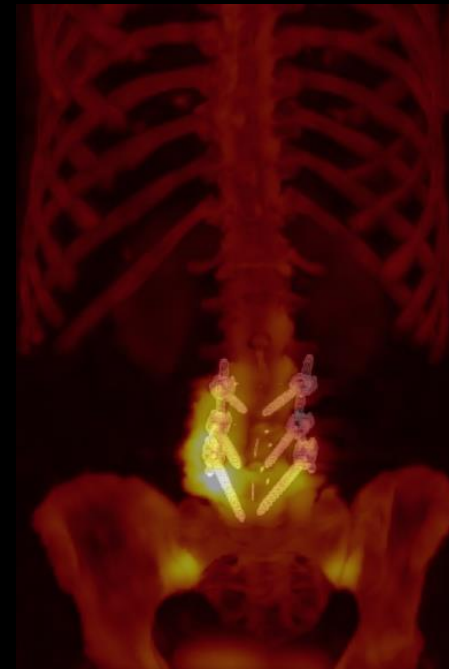
Evaluation of lumbar vertebral fixation screw loosening with xSPECT Bone for improved localization of pathology



3D-OSEM



xSPECT Bone™



xSPECT Bone

Evaluation of lumbar vertebral fixation screw loosening with xSPECT Bone for improved localization of pathology



History

A 72-year-old female patient presented with lumbar spinal fusion and ongoing post-operative pain after a short period of pain remission. Screw loosening was clinically suspected. A bone scan was performed to identify exact localization of loosening.

Diagnosis

Screw loosening in right L5 with focal increased uptake along with reactive hypermetabolism around the rods and adjacent screw was observed. xSPECT Bone™ helped to confirm the location of the site of loosening at L5.

Examination protocol

Symbia Intevo™, 28 mCi (1043 MBq) ^{99m}Tc-MDP, 45 stops per detector, 25 sec/stop
CT: 110 kV, 72 eff mAs.

3D-OSEM

xSPECT Bone™

xSPECT Bone

Improved delineation of loosening of hip prosthesis with xSPECT Bone

^{99m}Tc -MDP bone SPECT/CT study shows increased uptake around the entire shaft of right hip prosthesis, which is suggestive of prosthetic loosening. Sharper delineation of periprosthetic uptake with xSPECT Bone™ improves visual clarity for determination of the sites of maximum stress secondary to loosening.

[Click here to read case 2](#)

Improved delineation of loosening of hip prosthesis with xSPECT Bone

xSPECT Bone™



CT

3D-OSEM



xSPECT™/CT

Improved delineation of loosening of hip prosthesis with xSPECT Bone

xSPECT Bone™



History

A 49-year-old male with right hip prosthesis complained of persistent pain. A ^{99m}Tc-MDP xSPECT Bone™ study was performed on a Symbia Intevo™ SPECT/CT scanner to evaluate for possible loosening or infection.

Diagnosis

xSPECT Bone shows sharp delineation of increased tracer uptake along the margins of the femoral component of hip prosthesis. CT shows radiolucent zones in the cortex adjacent to the margins of the prosthetic shaft. xSPECT Bone shows significantly improved delineation of the periprosthetic uptake compared to that with 3D-OSEM reconstruction. These findings suggest screw loosening versus infection.

3D-OSEM



Examination protocol

Symbia Intevo with xSPECT Bone reconstruction. Injected dose: 20 mCi ^{99m}Tc-MDP; 60 stops, 15 sec/stop, CT: 130 kV, 45 eff mAs.

xSPECT™/CT

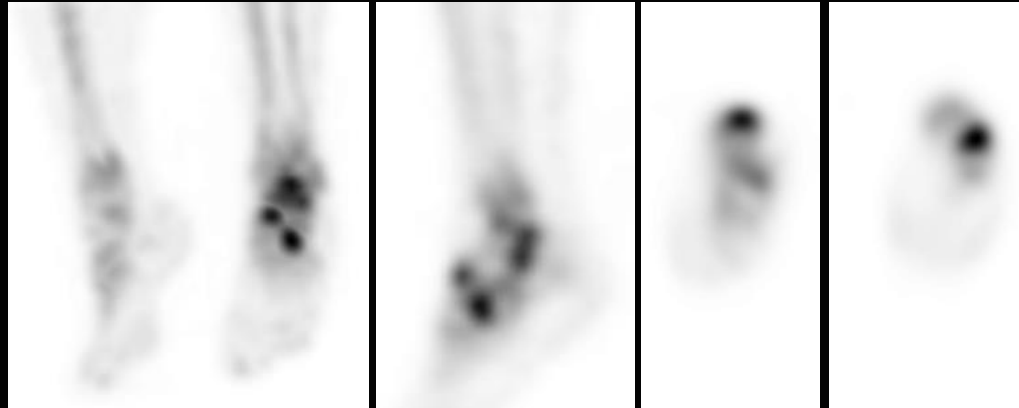
Improved delineation of talonavicular and calcaneocuboid arthropathy with xSPECT Bone

^{99m}Tc -MDP bone SPECT/CT study shows increased uptake in joint spaces of multiple tarsal bones, especially the talonavicular joint, which suggests of tarsal osteoarthritis. xSPECT Bone™ improves visualization of joint space uptake with sharp delineation of irregular articular margins, thereby providing greater clarity in assessment of the degree of arthropathy.

[Click here to read case 3](#)

Improved delineation of talonavicular and calcaneocuboid arthropathy with xSPECT Bone

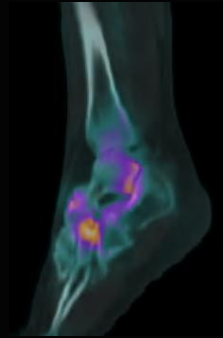
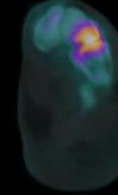
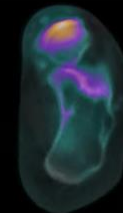
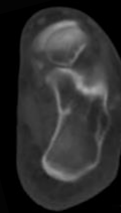
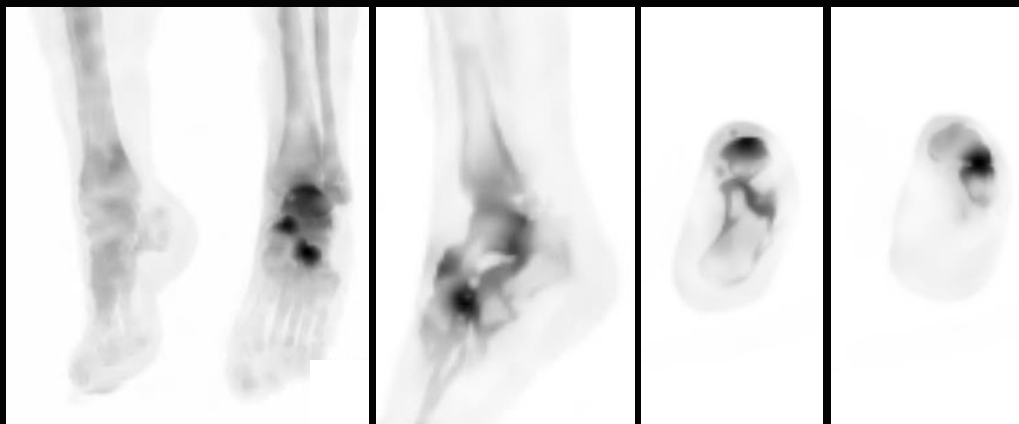
3D-OSEM



MIP

MPR

xSPECT Bone™



CT

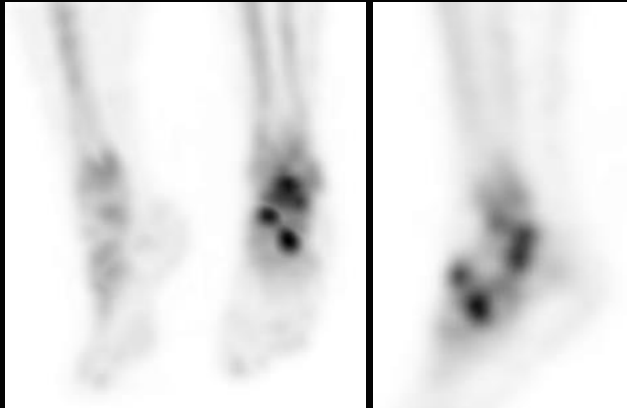
xSPECT
Bone/CT

CT

xSPECT
Bone/CT

Improved delineation of talonavicular and calcaneocuboid arthropathy with xSPECT Bone

3D-OSEM



History

56-year-old female with long-standing osteoarthritis in the left foot was referred for a bone scan to identify the exact localization of the osteoarthritis and origin of pain.

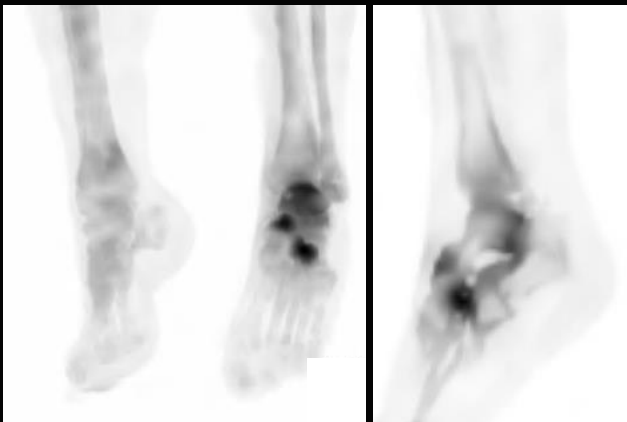
Diagnosis

xSPECT Bone™ shows sharper definition and higher contrast of areas of increased tracer uptake in the talocalcaneal, calcaneocuboid, and talonavicular joints compared to standard 3D-OSEM reconstruction. Increased joint space and articular uptake corresponds to subchondral sclerosis, irregular joint space narrowing and erosion, and subchondral cysts, which are typical of tarsal osteoarthritis. xSPECT Bone provided improved visualization of articular uptake, as well as sharper definition of cortical surfaces of adjacent tarsal bones.

MIP

MPR

xSPECT Bone™



Examination protocol

Symbia Intevo™ 6, 12 mCi [500 MBq] ^{99m}Tc-MDP, 3-hour post-injection delay, CT: 130 kV, 30 eff mAs. 6x2 mm collimation, SPECT: 60 stops per detector, 20 sec/stop.

CT

xSPECT
Bone™/CT

CT

xSPECT
Bone™/CT

xSPECT Bone helps differentiate acetabular osteomyelitis from septic arthritis in a 12-year-old boy

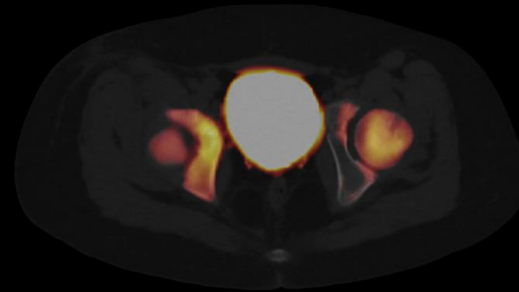
^{99m}Tc-MDP SPECT/CT demonstrates increased uptake in the right acetabulum in a 12-year-old boy with hip pain suggestive of acetabular osteomyelitis. xSPECT Bone™ provides sharper delineation of acetabular uptake and clear separation of acetabular margins from adjacent femur, which improves visual clarity helping separate acetabular pathology from joint space and femoral head involvement.

[Click here to read case 4](#)

xSPECT Bone helps differentiate acetabular osteomyelitis from septic arthritis in a 12-year-old boy



xSPECT Bone™



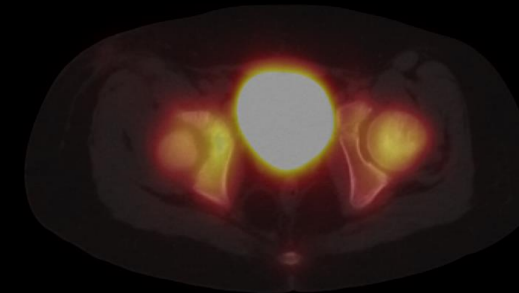
xSPECT Bone/CT



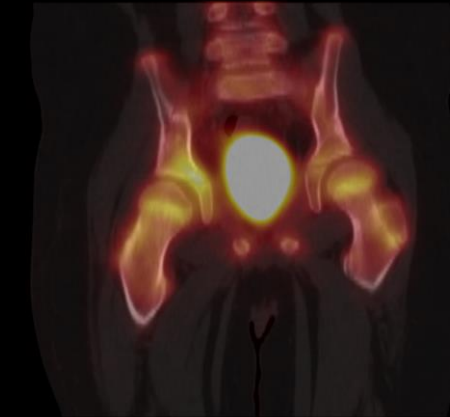
xSPECT Bone/CT



Flash 3D-OSEM



Flash 3D-OSEM/CT



Flash 3D-OSEM/CT

xSPECT Bone helps differentiate acetabular osteomyelitis from septic arthritis in a 12-year-old boy

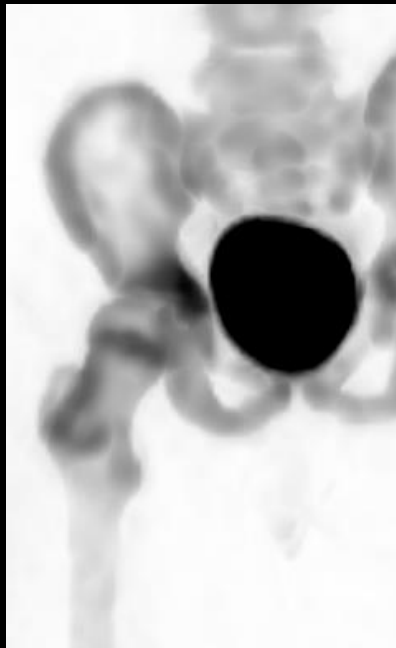


xSPECT Bone™ MIP



VRT

xSPECT Bone helps differentiate acetabular osteomyelitis from septic arthritis in a 12-year-old boy



History

A 12-year-old boy presented with pain and swelling in the right hip. The patient underwent ^{99m}Tc -MDP bone SPECT/CT using xSPECT™ Bone along with MRI to evaluate for right hip pathology.

Diagnosis

xSPECT Bone shows focal hypermetabolism in the right acetabulum. Uptake in the right head of femur, ischium, and pubis, as well as the contralateral hip joint appears normal. The growth plates in the femoral head and trochanters show expected levels of hypermetabolism. CT shows mild sclerosis in the right acetabular region corresponding to the area of focal hypermetabolism. Incomplete ossification of the acetabular plates are evident on CT on both sides as expected for age. The right hip joint space appears normal on CT. Pattern of hypermetabolism and CT sclerosis are consistent with diagnosis of early acetabular osteomyelitis. MRI also demonstrated effusion in right hip joint with subtle marrow signal abnormality of the right acetabulum probably reflecting marrow edema associated with early changes of osteomyelitis. Absence of significant femoral head hypermetabolism on xSPECT Bone helps differentiate acetabular osteomyelitis from septic arthritis, which could not be ruled out by MRI due to presence of effusion in right hip joint space.

Examination protocol

xSPECT Bone™ Symbia Intevo™ 2, 16 mCi [^{99m}Tc -MDP], 3-hour post-injection delay. SPECT: 60 stops per detector 20 sec/stop xSPECT Bone reconstruction. CT: 130 kV 26 eff mAs 2 X 2.5 mm collimation.

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**Thank
You!**