

## IMAGING GAMUT

# Unilateral decreased gallium limb uptake in poliomyelitis

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**Key words:** *Poliomyelitis, Gallium-67 scan, Bone scan*

**Background** A 33-year-old female had a history of poliomyelitis affecting her lower right limb at the age of 5-year. She presented with gradually increasing right knee pain and was referred to the nuclear medicine department for a bone scan for suspected arthritis of the knee and other joints.

**Procedure** A 3-phase bone scan of the knees together with a whole-body bone scan and SPECT-CT were performed. To exclude the possibility of septic arthritis, a gallium-67 scan was additionally performed with imaging at 24 and 48 hours.

**Findings** The planar bone scan was unremarkable except for mild arthritis in the right knee (Figure 1). The gallium scan showed generalised reduced activity in the right lower limb and relatively increased activity in the left lower limb together with increased uptake in the arthritic right knee (Figure 2).

**Conclusions** The bone scan findings were consistent with active arthritis in the right knee with moderate arthropathy involving several large and small joints. The unilateral reduced gallium activity in the limb was attributed



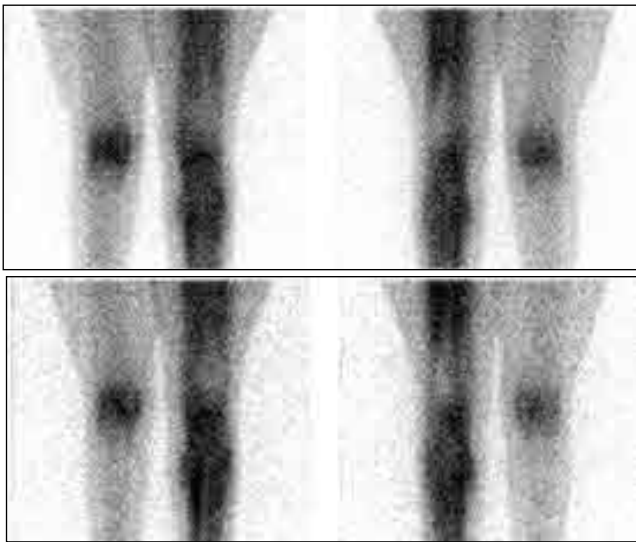
**Figure 1** Whole-body bone scan showing increased uptake in the right knee as well as multiple large and small joints in the body

to disuse atrophy of the right lower extremity, which was evidenced by less muscle mass on the right side on CT scan (Figure 3).

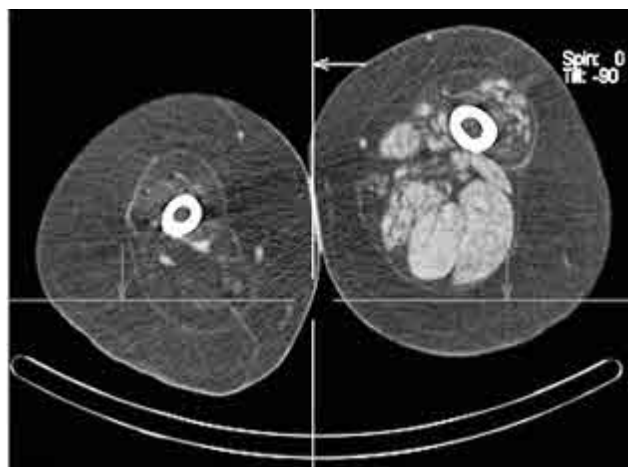
**Comments** This case illustrates the pattern of unilateral decreased gallium uptake in lower extremity in poliomyelitis. The uptake pattern was characterized by decreased uptake in the affected limb together with physiologic increased uptake in the non-affected limb. The

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**Figure 2** Gallium scan at 24 hours (top row) and 48 hours (bottom row) postinjection



**Figure 3** Axial CT at mid thigh level

cause of the reduced gallium uptake is related to disuse and has been reported previously in a patient with AVN of the femoral head [1].

Patterns of uptake on bone scans in patients with poliomyelitis have also been reported [2]. However, unilateral decreased uptake of gallium in lower extremity in patient with poliomyelitis has not been previously reported.

This case adds poliomyelitis to the differential diagnosis of unilateral decreased gallium uptake in the lower extremity.

## References

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