

Sign of the buttock; A valuable physical examination in the hemiplegic limbs of post-stroke patients

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Introduction

'Sign of the buttock', first described by Cyriax, is a combination of restricted straight leg raise and limited passive hip flexion with a bent knee. This sign indicates conditions such as osteomyelitis, sacral fracture, septic arthritis, neoplasm, and septic bursitis. In patients with stroke, various factors (e.g. language disturbance, cognitive impairment and affected side sensory and motor deficit) make hard to detect problems of the hemiplegic lower limb. We report 2 cases associated with hip pathology of the hemiplegic lower limb.

Case 1.

A 78-year-old man was newly diagnosed with right striatocapsular infarction. He complained of persistent left hip pain for 8 days. There was a fever 1 day before the left hip pain onset. Laboratory findings at the time of fever were neutrophilic leukocytosis, elevated CRP and ESR. Left hip radiography revealed osteoarthritis of both hip joints (Figure 1A). Empirical antibiotics treatment was started due to unknown cause fever. 10 days after admission, he was transferred to our department for comprehensive rehabilitation. A physical examination revealed the restricted straight leg raise and limited passive hip flexion with a bent knee (sign of the buttock positive). We performed hip magnetic resonance imaging (MRI), and it showed evidence of septic arthritis (Figure 1B). He transferred to the division of infectious diseases and used intravenous (IV) antibiotics for 6 weeks. And IV antibiotics changed to oral antibiotics for 3 months. Since then the laboratory findings and symptoms have been normalized.

Case 2.

An 82-year-old man was newly diagnosed with right middle cerebral artery infarction. He was transferred to our department for comprehensive rehabilitation. On physical examination, he showed positive sign of the buttock. There was no left hip pain at rest. History taking revealed that he had fallen down when the stroke occurred. Left hip radiography revealed no definite abnormality (Figure 2A). Whole body bone scan was performed to find hidden fractures. It shows increased radio-uptake on left femoral head (Figure 2B). Hip MRI suggests subchondral insufficiency fracture (Figure 2C, D). A bone densitometry was carried out, which revealed osteoporosis. The patient limited the weight bearing on the left leg for one month and then began the partial weight bearing exercise. The patient followed-up at 8 weeks revealed a normal clinical examination and absence of symptoms.

Discussion

We described the two cases associated with hip joint pathology in hemiplegic limb. In acute stroke management period, the patients needed bed rest, but these problem were found through detailed physical examination after they were transferred to rehabilitation department. These disease requires a modification of the strategy of stroke rehabilitation. It was initially detected by means of a valuable screening test, sign of the buttock. It is very simple and useful test identifying hip or pelvis pathology.



Figure 1. (A) Hip radiography revealed an calcifications near both acetabulum rim, suggests osteoarthritis of both hip joints. (B) Contrast enhanced T1-weighted MRI of the left hip showed enhancement of gluteus minimus (arrow) and iliopsoas muscles (arrow head).

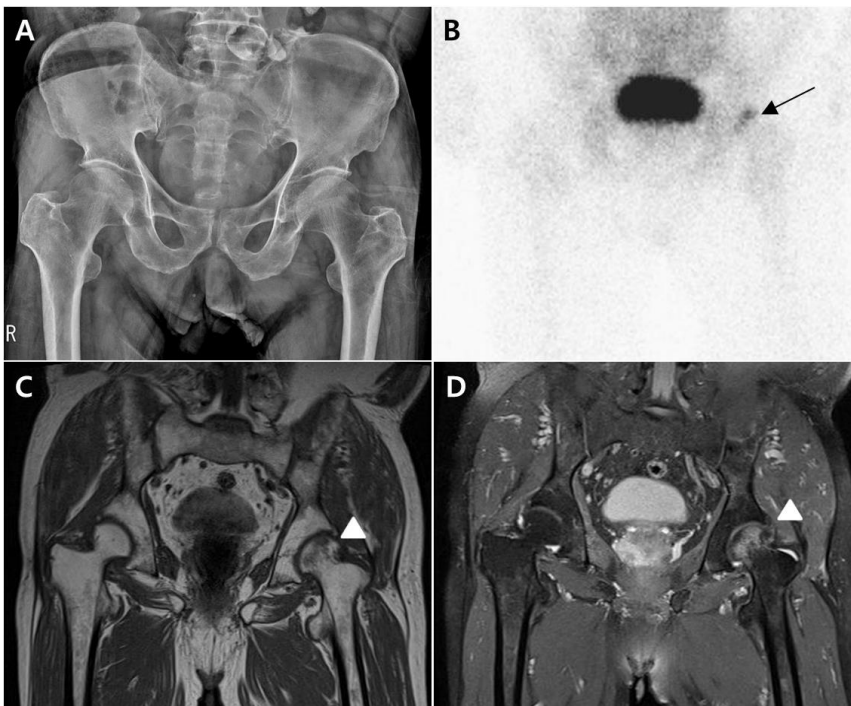


Figure 2. (A) Hip radiography revealed no definite abnormality. (B) Whole body bone scan showed hot spot at the left femur head (arrow). (C, D) On MRI of the left hip, a diffuse bone marrow edema pattern (arrow head) is seen, with low signal intensity on T1-weighted imaging (C) and high signal intensity on T2-weighted imaging (D)