Bilateral Subchondral Insufficiency Fractures Of The Femoral Head: A Case Report

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INTRODUCTION:
A recent concept of subchondral insufficiency fracture(SIF) of femoral head had been observed among elderly osteoporotic women or renal failure patients. The prevalence of SIF is unknown but Yamamoto et al 2012 study revealed histopathological evidence of SIF of 6.3% in hip osteoarthritis.[1] SIF is an abnormal fracture occurring from a normal physiological stress applied to a bone with deficient elastic resistance. Thus, bone fragility from osteoporosis or renal failure is considered the most important cause of SIF. Whereas ON is ischemic bone necrosis leading to bone collapse. Common risk factors for ON were chronic alcohol or steroid consumption. The clinical and radiographic appearances were similar to osteonecrosis(ON).[1] Especially in late stage of subchondral insufficiency fracture in which revealed subchondral collapse (crescent sign). Therefore, differentiation of SIF and ON is difficult and may require magnetic resonance images (MRI) or histopathological study. We report a rare case of bilateral hip SIF ended up with bilateral total hip arthroplasty (THR).

CASE REPORT:
A 72 years old elderly Chinese lady, with underlying osteoporosis on bisphosphonate treatment (Fosamax) and hypertension, presented to us with an insidious onset of anterior left hip pain for 3 months in duration. The pain intensified 4 days prior admission, which rendered her wheelchair-bound. There is no history of fall, strenuous activity, walking long distance or carrying heavy load before admission. She denied any constitutional symptoms or childhood hip problems. She had right total hip replacement(THR) performed a year ago for neck of femur fracture with incidental finding of insufficiency right femoral head fracture. She also had posterior instrumentation of spine performed 9 years ago for in vivo degenerative scoliosis. She is a retired dietician and denied consuming tradition medication, alcohol or steroid. There is no significant social or family history.

A diagnosis of subchondral insufficiency femoral head fracture was made based on radiograph and CT scan findings (Fig.1A, IB) left THR was performed with intra-op confirmation of SIF(Fig.2) The operation was uneventful and patient walked home upon discharge.

DISCUSSIONS:
Osteonecrosis of femoral head typically affects male patients under age of 50s. Most common risk factors were chronic steroid use and alcohol abuse.[2] However, of late, there were more incidence of female patients suffered symptomatic femoral head collapse similar to ON. Most of the SIF patients had underlying severe osteoporosis.[1] Both condition had overlapping presentation and radiograph findings.[3] Thus, it is beneficial to understand the aetiology and to differentiate between two conditions for better treatment outcome.

ABSTRACT TRUNCATED