CASE REPORT

Transient Osteoporosis of Hip and Lumbar Spine in Pregnancy

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Introduction

Transient osteoporosis of the hip in pregnancy is a relatively rare disorder characterized by disabling pain in the hip without prior trauma and by striking radiographic evidence of osteopenia that is limited to the hip [1]. The mean interval from the onset of symptoms until complete clinical resolution ranges from 4 to 24 months. It is a diagnosis of exclusion and despite a benign prognosis, the long clinical course causes prolonged disability. We present a case of a primigravida at term with transient osteoporosis of both the hip joints and the lumbar spine.

Case Report

A 30-year-old primigravida was admitted to our hospital at 38 weeks of gestation with severe pain in both the hip joints and inability to stand without support. Her pain started 1 month before presenting to us and was initially localized over the left hip joint. The pain progressively increased to bilateral involvement of the hip joints and for 1 week preceding admission, she was wheelchair bound. She had no preceding history of trauma, fever, or steroid usage. On examination, the musculoskeletal system was

within normal limits with no neurologic deficit. Fetal growth was corresponding to her gestational age. Her routine blood investigations were in the normal range. The sickling test was negative and alkaline phosphatase levels were normal. Magnetic resonance imaging (MRI) was done and showed diffuse marrow edema involving both femoral heads [Left > Right] with mild joint effusion. T1-weighted images revealed low signal intensity, while T2-weighted images revealed matching high signal intensity in the marrow. In consultation with the orthopedician, she was started on analgesics, calcium supplementation, and bilateral foam skin traction. She delivered a healthy 2.4-kg baby by an elective lower segment cesarean section (LSCS) under general anesthesia. She underwent elective LSCS as positioning for vaginal delivery was not possible due to her limited range of hip movements and also as there was an increased possible risk of hip fracture. Computerized tomography (CT) pelvis, done after delivery, showed focal osteopenic changes in both femoral heads (Left > Right) (Fig. 1). The dual energy X-ray absorptiometry bone densitometry report of the femur showed *T* score -2.4 , *Z* score -1.9 , and bone mineral density (BMD) 0.708 g/cm^2 , which according to World Health Organization guidelines is considered in the osteopenic range. Lumbar 3–4 spine bone density showed *T* score value -3.2 , *Z* score -2.5 , and BMD -0.818 g/cm^2 , which is in the osteoporotic range. She was continued on analgesics, anti-inflammatory drugs, and protected weight-bearing and gradual mobilization. She was discharged on the 11th post-operative day. At the 1-month follow-up, her ambulatory function had improved

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Fig. 1 CT scan of pelvis done after delivery, showed focal osteopenic changes in both femoral heads

remarkably and a repeat CT pelvis showed focal osteopenic changes, but less than before. She was advised back, hip, and lower limb strengthening exercises and calcium supplementation. At the 6-month follow-up, she was asymptomatic and had resumed her routine activities.

Discussion

Transient osteoporosis of pregnancy (TOP) is an uncommon condition, most often seen in the third trimester of pregnancy. It usually involves hip joints {Left > Right} and other areas affected may include the knee, ankle, foot, ribs, shoulder, and spine. The condition was first described by Curtis and Kincaid in 1959 [2] and was later termed transient osteoporosis of the hip by Lequesne. More than 200 cases have been reported in literature, but the disease appears to be rare in Asians, and few cases have been reported from Asian countries [3]. TOH has been reported under different names, i.e., transitory demineralization, migratory osteolysis, algodystrophy of the hip, and bone marrow edema syndrome. It is a diagnosis of exclusion. Differential diagnosis includes joint infection, rheumatoid arthritis, pigmented villonodular synovitis, idiopathic osteochondromatosis, reflex sympathetic dystrophy, and avascular necrosis of femoral head. Clinical symptoms tend to resolve in the first few postpartum months. Stress fracture can occur in the inadequately protected hip. MRI is the

diagnostic modality of choice. Many researchers have proposed different surgical and non-surgical treatment strategies, but the conservative approach which takes the form of analgesics, intermittent traction, a range of motion exercises, abductor strengthening exercises, and restricted weight bearing depending on the level of the patients' symptoms is preferred [4]. In our patient, good response was obtained with conservative management. Elective LSCS has been reported for bilateral severe TOH [2]. Alendronate, an anti-resorptive bisphosphonate, provides early relief in pain, but does not change the natural course of the disease [5]. The outcome of babies born to mothers who had TOP has not been reported.

Conclusion

- (1) We have presented this case because not just is TOP of the hip a rare clinical entity but bilateral involvement is even rarer. Our patient had osteopenic changes in both hip joints and osteoporotic changes in the lumbar spine.
- (2) The awareness of this disabling condition needs to be increased, which can be managed effectively by conservative measures and timely treatment, preventing stress fractures and its associated morbidity.
- (3) The need for vigilance in the assessment of musculoskeletal complaints in pregnancy should to be highlighted.

References

1. Sweeney AT, Blake M, Holick MF. Transient osteoporosis of hip in pregnancy. *J Clin Densitom.* 2000;3:291–7.
2. Guerra JJ, Steinberg ME. Distinguishing transient osteoporosis from avascular necrosis of the hip. *J Bone Jt Surg Am.* 1995;77: 616–24.
3. Kim SY, Koo KH, Suh KT, et al. Fatty marrow conversion of the proximal femoral metaphysis in transient bone marrow edema syndrome. *Arch Orthop Trauma Surg.* 2005;125:390–5.
4. Diwanji SR, Cho YJ, Xin ZF, et al. Conservative treatment for transient osteoporosis of the hip in middle-aged women. *Singap Med J.* 2008;49:e17–21.
5. Schapira D, Braun MY, Gutierrez G, et al. Severe transient osteoporosis of the hip during pregnancy: successful treatment with intravenous bisphosphonates. *Clin Exp Rheumatol.* 2003;21: 107–10.