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Adolescent Osteomalacia: A Case Report of Five Years Follow-up.

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Abstract

Nutritional disabilities are of major concern in early childhood and in adolescence which may lead to short stature and various deformities if not detected in the early stage. The adolescent age group is particularly prone to nutritional rickets / osteomalacia due to increased demand for nutrients, especially calcium and vitamin D. One such case of a young girl is being reported with five years of long follow-up with the aim to emphasize that early detection of this lesion is essential for good prognosis and such cases can be successfully treated even without POP immobilization and surgery.

Key Words: **Osteomalacia, adolescent**

Case Report

A young girl aged 16 years, unmarried , R/O Lucknow, attended OPD of Department of Physical Medicine and Rehabilitation, K.G's Medical University, Lucknow, in November 1999 with chief complaints of severe pain in lower back and inability to stand or walk for the last few months. There was no history of even mild injury. She belonged to low socio-economic status in Muslim community where PURDAH is still a social custom. On examination she was having acute spasm in both hips and lumbar area. She was unable to stand / walk and straight leg raising (SLR) was not possible on either side. Local tenderness was present in both Scarpa's triangle. Her blood chemistry revealed low serum calcium, serum phosphorus and Alk. Phosphatase was very high. The skiagram of pelvis with both hips showed bilateral incomplete fracture in neck of femur , bilateral pseudo fractures (Looser's zone) in superior and inferior pubic rami and generalized rarefaction in the bones (Fig. 1). Skiagram of lumbo-sacral spine showed generalized rarefaction and fish body appearance in the vertebral spaces. The young girl was advised absolute bed rest, plenty of milk and milk products, vitamin D and calcium supplementation along with daily sunlight exposure for atleast one hour in the morning. The plaster was not given. Suitable analgesics were given for 10 days to reduce acute pain and spasm. Although within 3-4 weeks her pain was reduced but absolute bed rest was continued for 12 weeks, followed by gradual weight bearing exercises. Her raised Alk. Phosphatase was decreased and serum calcium and phosphate also came to normal range. The full weight bearing started after 14 weeks when her skiagram showed marked healing in areas of multiple pseudo fractures.

Fig. 1 The skiagram of pelvis with both hips showed bilateral incomplete fracture in neck of femur, bilateral pseudo fractures (Looser's zone) in superior and inferior pubic rami and generalized rarefaction in the bones

Fig. 2. Her recent skiagram of pelvis with both hips (after 5 years) shows no signs of pseudo fractures

Incidentally she reported in our OPD again after exactly five years with no sign / symptom of previous illness. She was totally cheerful and doing all her household activities of daily life like squatting, cross legged sitting,

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standing , walking and running etc. Her recent skiagram of pelvis with both hips (after 5 years) shows no signs of pseudo fractures (Fig. 2). The appearance of triradiate pelvis which is very common in adult osteomalacia in females was not seen in this young girl.

Discussion

Osteomalacia means softening of bones, is the adult counterpart of rickets. (Maheshwari J, 1998)[5]. The adolescent with osteomalacia presents with non-specific symptoms and early recognition requires a high degree of suspicion in the absence of deformities. According to a study conducted in Departments of Physical Medicine & Rehabilitation and Paediatrics, K.G. Medical University, SGPGI, Lucknow on osteomalacia in adolescent girls in northern India, later published in 2003 by J. Rajeshwari[1] et al.; the adolescent girls are discouraged from out door activities (in comparison to boys) so that even non purdah practicing girls, who would otherwise be able to expose the face, neck, forearm, arms and hands to sunshine suffer from severe vitamin D deficiency rickets / osteomalacia. Moreover authors did not encounter a single male adolescent patient. Further it has been observed that low dietary calcium intake was also a pertinent factor in almost all their cases. Dietary calcium deficiency has been shown to cause secondary vitamin D deficiency[4]. This fact was also seen in another study from China[3] wherein authors were of the opinion that low dietary calcium intake of rural persons that kept their serum vitamin D levels low inspite of better sun exposure as compared to urban persons. The lower dietary calcium intake may precipitate clinically significant Hypovitaminosis D in these vulnerable groups, in the presence of marginal sun exposure.

In another study on the varying role of vitamin D deficiency in the etiology of Rickets in young children vs adolescent, conducted at SGPGI & KGMU, Lucknow, the Balasubramanium K et al 2003[2] have observed that in the clinically, biochemically and radiologically proved cases of rickets among children, the majority of the children were having normal 25 Hydroxy vitamin D estimation. Children showed complete healing in 3 months whether they received calcium alone or with vitamin D, thus deficient calcium was universal among children and adolescents with rickets / osteomalacia.

Conclusion

Early recognition of adolescent osteomalacia requires high index of suspicion. We must over emphasize the benefit of adequate sun exposure and dietary calcium intake to the community in general and to younger generation of females in particular.

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