

SF Medical Case Reports and Clinical Images

“Marbled or Ivory Pelvis”- A Potentially Ominous Novel Radiographic Sign

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Clinical Image

We all know that bones undergo continuous remodeling during the life, where both bone deposition and bone resorption is taking place. However, due to some diseases this normal process can get disturbed leading to either predominance of bone deposition manifesting as increased bone density, the causes of which may vary depending on whether the patient falls in pediatric or adult age group or predominance of bone resorption as seen in osteoporosis inducing diseases. A 14 year old female patient came with the complaint of deep aching pain in the right hip region for 6 months which was insidious in onset and was present throughout the day, progressed to the level of inability to bear weight. It was associated with loss of weight and appetite. There was no history of trauma, fever, night sweats or any systemic complaints. On examination there was pallor, with tenderness of groin and iliac region & attempted hip movements were restricted with pain & muscle spasm. There was no associated localized, regional or generalized lymphadenopathy. Radiographs of the hip along with pelvis & spine were taken. Hip radiograph typically showed diffuse, homogeneous increase in opacity of hemi pelvis with seemingly maintained bony contour (Figure1). Moreover, the radiographs of the spine were normal (Figure 2,3 & 4). On preliminary assessment a differential diagnoses with the possibility of Osteosarcoma, Hodgkin Lymphoma, Ewing sarcoma involving the pelvic bone was entertained due to the apparently short duration of presentation and applying the causes of similar radiological appearance exemplified by ‘Ivory vertebral’, as given in literature, pending confirmation with further evaluation. While the patient was planned for further

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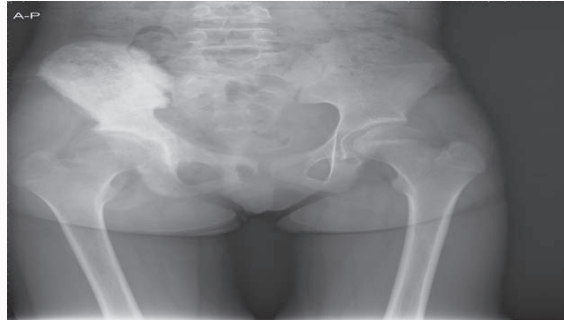


Figure 1: Radiograph of pelvis showing “Marbled or Ivory hemi pelvis”.

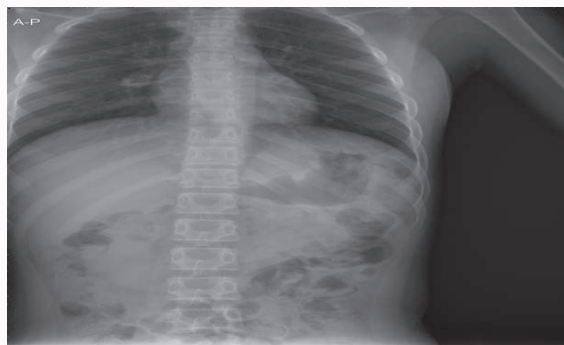


Figure 2: Normal radiograph (anteroposterior view) of dorsolumbar spine.



Figure 3: Normal radiograph (Lateral view) of dorsolumbar spine.

evaluation, unfortunately, the child died soon after hospitalization. Ivory vertebral is well defined in the literature-where there is diffuse and homogeneous increase in opacity of a vertebral body that otherwise retains its size and contours, and with no change in the opacity and size of adjacent intervertebral discs. However, such a occurrence, which can be aptly defined as a “Marbled or Ivory pelvis” radiographic sign in the absence of ivory vertebral as confirmed from radiographs, has not been found on search of literature. Therefore, it is fundamental that radiologists be aware of this novel finding on



Figure 4: Normal radiograph of Cervical spine.

imaging characteristics, in order to better advise & alert the requesting physician with various differential diagnoses as mentioned coming to his mind for evaluation of such pediatric patients further. Diagnosis can well be confirmed with a c-arm image intensifier or Computed Tomogram (CT) assisted bone biopsy. The differential diagnosis in a pediatric patient remains Osteosarcoma, Hodgkin Lymphoma, Ewing sarcoma involving the pelvic bone.