

Heterotopic Ossification: DISH and Myositis Ossificans in Human Remains Identification

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Abstract : Diffuse idiopathic skeletal hyperostosis (DISH) is a degenerative bone disease also known as Forestier's disease and ankylosing hyperostosis of the spine is characterized by a tendency toward ossification of half the anterior longitudinal spinal ligament without intervertebral disc disease. DISH is not considered to be osteoarthritis, although the two conditions commonly occur together. Diagnostic criteria include fusion of at least four vertebrae by bony bridges arising from the anterolateral aspect of the vertebral bodies. These vertebral bodies have a 'dripping candle wax' appearance, also can be seen periosteal new bone formation on the anterior surface of the vertebral bodies and there is no ankylosis at zygoapophyseal facet joint. Clinically, patients with DISH tend to be asymptomatic some patients mention moderate pain and stiffness in upper back. This disease is more common in man, uncommon in patients younger than 50 years and rare in patients under 40 years old. In modern populations, DISH is found in association with obesity, (type II) diabetes; abnormal vitamin A metabolism and also associated with higher levels of serum uric acid. There is also some association between the increase of risk of stroke or other cerebrovascular disease. The DISH condition can be confused with Heterotopic Ossification, what is the bone formation in the soft tissues as the result of trauma, wounding, surgery, burnings, prolonged immobility and some central nervous system disorder. All these conditions have been described extensively as myositis ossificans which can be confused with the fibrodysplasia (myositis) ossificans progressive. As in the DISH symptomatology it can be asymptomatic or extensive enough to impair joint function. A third confusion osteoarthritis disease that can bring confusion are the enthesopathies that occur in the entire skeleton being common on the ischial tuberosities, iliac crests, patellae, and calcaneus. Ankylosis of the sacroiliac joint by bony bridges may also be found. CASE 1: this case is skeletal remains presenting skull, some vertebrae and scapulae. This case remains unidentified and due to lack of bone remains. Sex, age and ancestry profile was compromised, however the DISH pathognomonic findings and diagnostic helps to estimate sex and age characteristics. Moreover to presenting DISH these skeletal remains also showed some bone alterations and non-metrics as fusion of the first vertebrae with occipital bone, maxillae and palatine torus and scapular foramen on the right scapulae. CASE 2: this skeleton remains shows an extensive bone heterotopic ossification on the great trochanter area of left femur, right fibula showed a healed fracture in its body however in its inteoosseous crest there is an extensive bone growth, also in the Ilium at the region of inferior gluteal line can be observed some pronounced bone growth and the skull presented a pronounced mandibular, maxillary and palatine torus. Despite all these pronounced heterotopic ossification the whole skeleton presents moderate bone overgrowth that is not linked with aging, since the skeleton belongs to a young unidentified individual. The appropriate osteopathological diagnosis support the human identification process through medical reports and also assist with epidemiological data that can strengthen vulnerable anthropological estimates.

Keywords : bone disease, DISH, human identification, human remains

Conference Title : ICFS 2016 : International Conference on Forensic Sciences

Conference Location : Paris, France

Conference Dates : August 22-23, 2016