Diffuse idiopathic skeletal hyperostosis - a case report

Nitin R. Mudiraj 2Manisha R. Dhubale
1Professor 2Assistant Professor, Department of Anatomy, Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli.

Abstract:
The case reported here is an incidental finding of a specimen of lower three lumbar vertebrae with sacrum. It displayed ossification of anterolateral aspect of lower three lumbar vertebrae with sparing of intervertebral disc space. Para-articular osteophytosis was found at zygapophyseal (facet) joints, however ankylosis was absent at zygapophyseal joints as well as at interspinous sites. Based on its features we labelled it as a case of diffuse idiopathic skeletal hyperostosis (DISH). It is a common but often unrecognized disorder of unknown etiology in elderly individuals. The awareness of this entity may stimulate clinicians and researchers to focus on its pathogenesis, treatment and prevention.

Key words: Forestier's disease, exuberant outgrowths, flowing osteophytosis, enthesis, ossifying diathesis, radiculopathy.

Introduction
Diffuse idiopathic skeletal hyperostosis (DISH) is a condition characterized by calcification and ossification of soft tissues, mainly ligaments and enthesis. This condition was first described by Forestier and Rotes-Querol in 1950 and was termed as skeletal hyperostosis. Therefore DISH is also called as Forestier's disease1,2.

The axial skeleton is often involved particularly the thoracic spine. But involvement of peripheral joints lead researchers to use the name diffuse idiopathic skeletal hyperostosis.

Case report
During routine sorting of bones of osteology section in the department of Anatomy, Bharati Vidyapeeth Medical College, Sangli we found a specimen of lower three lumbar vertebrae with sacrum. Its anatomical
features were studied in detail. On gross examination, ossification of anterolateral aspect of lower three lumbar vertebrae was noted with bumpy contour. The characteristic appearance of ossification was like a candle wax dripping down the spine. No ossification of posterior longitudinal ligament was observed. Intervertebral disc height appeared to be preserved. Exuberant para-articular osteophyisis was noted at zygapophyseal (facet) joints. However, ankylosis was absent at zygapophyseal joints as well as at interspinous sites. There was no lumbar canal stenosis or narrowing of intervertebral foramina. (Fig.1 and Fig.2)

Width of sacrum was 106 mm and transverse diameter of body of S1 vertebra was 56 mm. Hence carpobasal index of sacrum 52.83, confirmed male sex of the specimen.

**Discussion**

Diffuse idiopathic skeletal hyperostosis is a common ossifying diathesis in middle aged and elderly patients. It is characterized by bone proliferation along the anterior aspect of spine and at extra spinal sites of attachment of ligament and tendon to bone. These lesions occur most commonly in the thoracic portion of the spinal column which is least mobile, although they may involve all the spinal segments and extra spinal sites like pelvis, calcaneus, olecranon process of ulna, patella and metatarsophalangeal joint of hallux. The etiology of the disease is unknown however several authors have reported an association with metabolic disorders like greater body mass index, higher serum uric acid level, hyper-insulinemia with or without diabetes mellitus, dyslipidemia and prolonged use of isoretinol. Prevalence is more common in male sex. The frequency appeared higher in Caucasians than in blacks, native Americans and Asians, suggesting a genetic origin of the disease.

In this condition, the most characteristic feature is ligamentous calcification and ossification along the anterolateral aspect of vertebral bodies with localized flowing osteophyisis producing a typical candle wax appearance. The criteria set by Resnick and Niwayama to diagnose DISH includes involvement of at least four contiguous vertebrae, preservation of intervertebral disc space, absence of bony ankylosing of facet joint and absence of sacroiliac erosion. But some authors estimate that three vertebrae are sufficient.

DISH may have minor or insignificant symptoms. It may present with back pain, stiffness of spine, recurrent tendinitis, bursitis or myopathy. The exuberant outgrowths from the apophyseal joints or ossification of posterior longitudinal ligaments in DISH may compromise spinal canal and lateral recesses causing radiculopathy or myopathy.

DISH is often included into osteoarthritis, but the patient affected by DISH differs from patient with primary osteoarthritis and ankylosing spondylitis in several aspects. In primary osteoarthritis, very mobile lower portion of cervical and lumbar spine are commonly affected with reduced intervertebral disc space. The primary target for the osteoartritic process is the cartilage in intervertebral disc and cartilage of facet joints where as targets in DISH are spinal ligaments and enthesis. Ankylosing spondylitis is associated with sacroiliac and apophyseal joint sclerosis and bony ankylosis predominantly affecting young adults.

**Conclusion**

DISH is usually benign and may coexist or enhance some of clinical manifestations of osteoarthritis. But the prevalence, joint distribution, gender distribution and pathogenic mechanisms of both conditions are different. Hence it should be considered as separate clinical entity.

**References**


Address for communication:
**Dr. Nitin R. Mudiraj**
Professor of Anatomy,
Bharati Vidyapeeth Medical college & Hospital,
Walnesswadi, Sangli - 416 414.
e-mail ID: dr.nitinmudiraj09@gmail.com
Mobile: 09421858613