CONGENITAL HEMIVERTEBRA/E

Hemivertebra is a condition where one half of the vertebra completely fails to form. It is the most common aetiology of congenital scoliosis [Mc Master 1986]. Hemivertebrae may be fully segmented, partially segmented, or unsegmented. The type and location of hemivertebra can affect the likelihood and the rate of progression of scoliosis [Kaspiris 2011]. The degree of scoliosis tends to worsen as the child grows [Grimme 2007] The rate at which scoliosis develops depends on many factors including the type of hemivertebra, number and position of hemivertebrae in the spine, ipsilateral v/s bilateral in case of multiple hemivertebrae and age of the patient [Kaspiris 2011].

In some cases scoliosis can progress rapidly as in our index case, and hence can benefit from early orthopaedic referral. Surgical intervention is most commonly used when the hemivertebrae is located from the thoracolumbar to lumbosacral junction [Shawen 2002].

Even though most hemivertebrae occur in isolation, a significant number could be associated with GIT, CNS, renal, other vertebral and cardiovascular anomalies. They can also be part of various genetic syndromes [Bolini 2010].

The mainstay of treatment remains early diagnosis and intervention before severe curvature and deformity occur [Hedequist 2007] Hence, early and regular review by the orthopaedic team is essential.

Variations of hemivertebra/e

Neonate with antenatal or postnatal diagnosis of hemivertebra/e

1. Thorough review of antenatal scans and family history
2. Careful general and systemic examination

Normal examination [no dysmorphism, systemic exam normal]

Complete spine x ray [AP and lateral]
Spinal and renal US

MRI spine if abnormal spine USS

Abnormal examination [dysmorphism or abnormal systemic examination]

Genetic referral and chromosomal studies
Complete spine x ray [AP and lateral views]
Further investigations based on abnormal system [Echo, cranial US, spinal US, renal US]

1. Orthopaedic referral before discharge
2. Parental counselling by consultant or SR about possibility of long term follow up and scoliosis depending on location of hemivertebra and other anomalies [Increased scoliosis with thoracic> thoracolumbar> cervicothoracic> lumbosacral> lumbar; Mc Master et al, 1982]