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Myelomeningocele Occurs in a Male Newborn

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Abstract

We report a male newborn who was admitted to our NICU department after being referred from general hospital as a case of respiratory distress. We have found accidentally a thoracic vertebral defect, a very rare vertebral abnormality that we recognized in the x-ray imaging performed for the study of the lung parenchyma.

Keywords: Myelomeningocele; Spina bifida

Introduction

Myelomeningocele (Spina bifida) is the incomplete closure of the posterior components of the vertebrae be-cause of a developmental disorder. In classical classification, SB has two types: Closed (spina bifida occulta, SBO) and open (spina bifida Aperta, SBA). Some abnormalities, such as defects in the vertebral components, tufts of hair on the skin, and nevus, are observed in SBO; however, a sac is not observed [1-3].

Case Report

A male newborn born from a 38years old Patient II Abortus III mother at GA of 38+3 weeks via Cesarean section (C/S) indication being gestational diabetes and macrosomia at term. Mother had Antenatal Care follow up at general hospital and pregnancy was complicated by raised blood sugar. The mother was on oral hypoglycemic agent (Metformin) during pregnancy, but she had poor glycemic control. Finally, she was put on insulin with sliding scale. After delivery the neonate developed respiratory distress and was referred to our hospital for NICU care.

On presentation to our hospital, the neonate is in respiratory distress with respiratory rate of 30 per minute with grunting. Saturation of Oxygen was 97-100 % with Continuous Positive Airway Pressure at 3cm depth and 8 liters. Weight was 4000gm, head circumference (HC) 36cm and length was 51cm. The HC and length are appropriate for gestational age (AGA) but the weight was large for gestational age (LGA).

On chest examination, there was inter-costal and sub costal retraction. Had crepitations on the basal anterior chest bilaterally. On neuro-logical examination, he was conscious, complete moro, strong grasp and normal tone but absent suckling reflex. With an assessment of Term (GA = 38 + 3 weeks), LGA (Macrosomia), Infant of Diabetic Mother, Cesarean delivery for gestational DM and macrosomia), Respiratory distress secondary to Congenital pneumonia to rule out Transient Tachypenia of the Newborn (TTN), he was treated with maintenance fluid and anti-biotics (Ampicillin and Gentamycin). The CPAP was continued; later he was put on intra nasal oxygen which latter was discontinued Investigations including chest x-ray were done. Chest -x ray showed T1-T6 vertebral body defects and left basal lung parenchymal infiltrates (Figure 1).

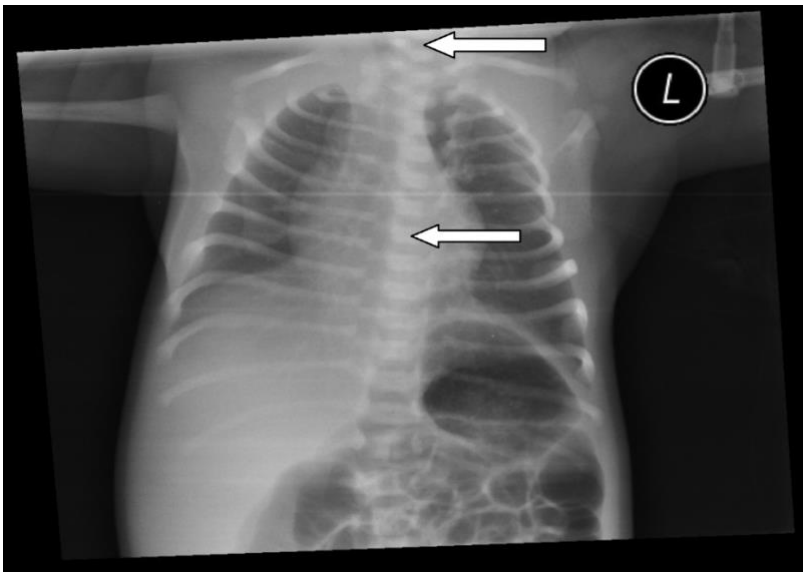

Figure 1: Arrows showing unfused vertebra from T1-T6.

Discussion

Congenital anomalies of spine are quite common and most of these anomalies are localized at cervical and lumbar spine. Conversely, the localization of these anomalies at thoracic spine is rare. Usually, spine deformities can be divided into congenital and acquired forms. Congenital forms are mainly divided into 2 types: segmentation and development defects. Unilateral unsegmented bars and bi-lateral segmentation defects belong to the first group. On the other side, developmental After 7days of hospital stay, the neonate was discharged home improved with appointment. defects include hemi vertebrae and failure of fusion of neural tube which includes, in turn, the simple cleft of the posterior arch of the vertebrae (spina bifida occulta) and spina bifida [4].

NTDs are the most common malformations having an incidence of 1-5 per 1000 live births [5]. Spina bifida is a Latin term which refers to a posterior opening in the vertebrae associated to a spinal cord involvement. Spina bifida results from a neural tube closure anomaly incomplete closure of posterior vertebral arch) associated with lesion of spinal cord [6-8]. It is due to embryological anomaly occurred in the 4th week. It is generally located in the lumbar or sacral regions and ex-tends over 2-4 vertebrae.

More precisely, spina bifida would be the result of a disorder in the metabolism of folates. Several genes are thought to be responsible of the malformation, such as the MTHR (methylene tetra-hydro folate reductase) gene located in 1p36.3 [7,9] or PAX3 structure gene [8]. Zinc metabolism has also been incriminated.

In case of spina bifida occulta, the anomaly is often discovered by chance. Hair on the back midline is a classical sign of spina bifida [6]. Spina bifida occulta is usually found in the areas C1 and C6 [7]. Standard cervical spine X-rays are a good source of information. These anomalies can occur at any level of the spine, although it is more frequently found at the lumbo-sacral level and more rarely in the cervical area [10]. In this report, we describe a case of asymptomatic simple spina bifida occulta. The most affected vertebrae are mainly T1 to T6.

Conclusion

We have described a rare case of thoracic vertebral failure of fusion at T1-T6 level in a neonate who was admitted to our NICU for management of respiratory distress during chest x-ray investigation for lung parenchymal examination. We think that this case re-port may be helpful to radiologists to look for such uncommon findings when they are evaluating patients with non-specific neurological symptoms; such abnormalities may result in musculoskeletal problems such as foot deformities; spinal bifida may manifest with leg/hand weakness, numbness or clumsiness, plus non-specific neurological pain and for neurosurgeons to consider this singular finding.

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