

CONGENITAL ANOMALIES

Congenital anomalies of the ribs: an autopsy case report

Dilek Durak¹, Bülent Eren², Recep Fedakar¹, Nursel Türkmen¹*Uludag University Medical Faculty, Forensic Medicine Department, Görükle 16059, Bursa, Turkey.*
bulenteren2000@yahoo.com

Abstract: We describe a medico-legal autopsy case of a three-day newborn girl. This was the fifth pregnancy of the mother who was 34 years at that time. Her parents were non-consanguineous. There was no family history of congenital abnormalities. Her mother did not smoke or drink and did not recall toxic exposure during the pregnancy. The birth weight and physical examination was normal. The child died postnatal on the third day, with haemoptysis at home. To clarify the exact cause of death, the child was sent to the Council of Forensic Medicine. At the autopsy, in the internal observation, the bilateral first ribs were wide, the sternal extremity of the left second rib was bifid, the eighth ribs were bilaterally connected to the sternum via costal cartilages. Microscopic pathological findings were not found. Analyses of the deceased's blood and urine were negative for drugs. In this case, genetic study was not done. Based on all information available, the cause of death was not definitely determined (*Fig. 1, Ref. 9*). Full Text (Free, PDF) www.bmj.sk.
Key words: congenital anomaly, rib, autopsy.

Congenital and acquired abnormalities can be seen in the ribs. Signs of abnormality can appear in the ribs as variations in number, size, mineralization, and shape. Normal variants are usually clinically insignificant. Abnormalities detected in the ribs may be the initial indication of previously unsuspected disease such as congenital bone dysplasia, acquired metabolic disease, iatrogenic condition, trauma (especially child abuse), infection, and neoplasm. Congenital anomalies of the ribs are relatively uncommon (1, 2). We report a medico-legal autopsy case of congenital ribs anomalies. A review of literature was conducted.

Case report

We describe a medico-legal autopsy case of a three-day newborn girl. This was the fifth pregnancy of the mother who was 34 years at that time. The child was born through vaginal delivery on the 38 week of gestation. The Apgar score was 9/10. Her parents were non-consanguineous. There was no family history of congenital abnormalities. Her mother did not smoke or drink and did not recall toxic exposure during the pregnancy. The birth weight was 3460 g, the length was 55 cm and the physical examination was normal. The child died postnatal on the third day, with haemoptysis at home. To clarify the exact cause of death, the child was sent to the Council of Forensic Medicine. At the autopsy, in the internal observation, the bilateral first ribs were

**Fig. 1.** Bifid left second rib.

wide, the sternal extremity of the left second rib was bifid, the eighth ribs were bilaterally connected to the sternum via costal cartilages (*Fig. 1*). A patent ductus arteriosus (PDA) was also found. Microscopic pathological findings were not found. Analyses of the deceased's blood and urine were negative for drugs. In this case, genetic study was not done. Based on all information available, the cause of death was not definitely determined.

Discussion

In most patients, the ribs are evaluated on the chest radiography. However, routine radiographs of the chest are inadequate for rib detail. The best method for evaluation of the ribs is computerized tomography (CT) or magnetic resonance (MR) imaging (1). In our opinion, autopsies should be available for the teaching and study of the ribs, as in this study, we report a medico-

¹Uludag University Medical Faculty, Forensic Medicine Department, Görükle 16059, Bursa, Turkey, and ²Council of Forensic Medicine of Turkey Bursa Morgue Department

Address for correspondence: Bülent Eren, MD, Council of Forensic Medicine of Turkey Bursa Morgue Department, Heykel, Osmangazi 16010, Bursa, Turkey.
Phone: +90.224.2220347, Fax: +90.225.5170

legal autopsy case of congenital ribs anomalies and PDA. One percentage of the population shows some variations in the rib structure (3). The reported prevalence of cervical ribs varies from 0.2 to 6.1 % (1, 2, 4, 5). Cervical ribs are rarely symptomatic in early childhood, in older children and adults, a compression of the brachial plexus or subclavian artery can give rise to the thoracic outlet syndrome (1). A presence of cervical rib might be found of sacralisation (6). Intra-thoracic rib is a rare congenital anomaly (4). A bifid intra-thoracic rib is a very rare anomaly of the ribs, which is characterized by an osseous prominence of a rib into the thoracic cavity (3). Occasionally, the sternal extremity of the third or fourth rib may be bifid, and the eighth rib may reach the sternum on one or both sides (7). Here, we report a unique case, where the sternal extremity of the left second rib was bifid, and the eighth rib reached the sternum on both sides. An increased numbers of ribs are seen in the trisomy 21 syndrome. It is more common to see 11 pairs in the absence of associated anomalies (1). In this study, the bilateral first ribs were wide. In achondroplasia, the ribs are short and wide. The inheritance is autosomal dominant, with spontaneous mutation in 80 % of cases (1). In our case, there was no family history of congenital abnormalities. But, genetic study was not done. Congenital anomalies of the ribs are often associated with congenital deformities of the spine (8, 9). In our case, there were no spine deformities. At the autopsy, routine evaluation of the ribs may be important so that valuable diagnostic data will not be missed.

Conclusions

We report an autopsy case; there were rib anomalies and PDA. To our knowledge this condition was not described in literature.

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