Seven Accessory (Supernumerary) Thoracic Ribs in Left Thoracic Wall: A Case Report

Authors

Sunita Bharati\(^1\), Brij Raj Singh\(^2\), Ujwal Gajbe\(^3\), S. Swayam Jothi\(^4\)

\(^1\)Assistant Professor, Sri Satya Sai Medical College & Research Institute, Amapettai, Chennai (T.N)
\(^2\)Assistant Professor, Dept of Anatomy, J. N. Medical College, Sawangi, Wardha
\(^3\)Professor, Dept of Anatomy, J.N. Medical College, Sawangi, Wardha (M.S)
\(^4\)Professor, Dept of Anatomy, Sri Satya Sai Medical College & Research Institute, Amapettai, Chennai (T.N)

Corresponding Author

Dr. Sunita P. Bharati, MBBS, MD (Anatomy)
Assistant Professor, Dept of Anatomy, Sri Satya Sai Medical College & Research Institute, Amapettai-603108, Chennai (Tamil Nadu), India
Email: drsunitagiri@gmail.com, Mob: +91-8940322180

Abstract

Common rib anomalies include cervical ribs, bifid ribs, rib dysplasia, and intercostal fusion. The term “intrathoracic rib” signifies abnormal location of a rib within the thoracic cavity. An intrathoracic rib is a rare and benign congenital anomaly of the thoracic cage. A Female cadaver had seven supernumerary intrathoracic ribs on the left side. Its location in the posterior mediastinum with lack of attachment to adjacent ribs (intercostal fusion) were unusual features. Most commonly accessory ribs are associated with right side but in the present study it was observed on left side.

Keywords: Intrathoracic rib, Supernumerary rib, intercostals fusion.

Introduction

The term “intrathoracic rib” signifies abnormal location of a rib within the thoracic cavity. The intrathoracic rib (IR) is a very rare congenital anomaly in which a normal rib, an accessory rib, or one arm of a bifid rib courses abnormally into the chest cavity\(^{[1,2]}\). It may originate from a vertebra or a rib, and sometimes it may be associated with vertebral abnormalities \(^{[3]}\). Supernumerary Intrathoracic rib (IR) was first reported in 1949 by Jacobs \(^{[1]}\). A left-sided supernumerary rib was first reported in 1957 by Wilk and Hülshoff \(^{[2]}\). Anomalous ribs arise due to inappropriate segmentation during the embryonic development of the axial skeleton. These anomalies are usually clinically silent and detected incidentally by imaging studies. They should be kept in mind in the differential diagnosis of thoracic pathologies \(^{[4]}\). Most commonly it is associated with right side but in the present study it was observed in the left side. Ribs are protective ribbon-like bony elements normally present within the chest wall and are few of the most imaged structures in the clinical practice.

Case Report

Seven accessory (Supernumerary) thoracic ribs were found in female cadaver on the left side.
during routine dissection at Department of Anatomy, J.N. Medical College, Sawangi (Meghe), Wardha (M.S). The specimen of interest was dissected carefully and photographed. On the left thoracic wall of a female cadaver, accessory ribs originated from left side of third to ninth thoracic vertebrae (fig-1). The lengths of accessory ribs ranged from 2 to 10 cm. These were false ribs because they never had costal cartilage and were not attached with sternum but to vertebrae (Fig No. 1). The associated finding was left lung was hypoplastic 5x4x4cm and it had three impressions caused by ribs (fig-3).

**Figure No 1**: seven left intrathoracic ribs along with normal ribs
Figure No 2: False ribs attached to vertebrae

Figure No 3: Left Lung showing impressions caused by ribs
Discussion
Ribs form from costal process of thoracic vertebrae and thus and are derived from the sclerotome portion of paraxial mesoderm \[5\]. It is more commonly present on the right side and between the third rib through the eighth rib, and no gender predilection is reported \[6\]. Rib anomalies are relatively common and affect almost one percent of the general population.. Kamano et al. classified intrathoracic rib into four types. Type Ia is a supernumerary rib. Type Ib is a bifid rib originating from the posterior part of the rib. Type II is a depressed rib, and Type III is a bifid rib originating from the anterior part of the rib \[7\]. The present case had characteristics of Type Ia, In the present case report it was observed that the left lung was collapsed and impression of ribs were noticed on external surface, similar finding was noticed by Mahajan et al \[8\].

Inference
The present case is suggestive of left seven intrathoracic ribs (left seven supernumerary ribs), and hypoplastic left lung. Clinical significance of these anomalies are usually silent throughout life time& detected incidentally by imaging. These should be kept in mind in differential diagnosis of thoracic pathology \[8\].

References
2. Whitlark FL, Engels EP. Supernumerary left intrathoracic rib with right-sided aortic arch. JAMA1962, 179: 968
4. M. Apaydin, A. Sarsilmaz, M. Varer, Third accessory (Supernumerary) intrathoracic right rib, Surgical and Radiologic Anatomy 2009, Vol 31(8), 641–43,
5. T.W. Sadler Lagman’s Medical Embryology 10 \text{th} Edition, 2006, Lippincot Williams & Wilkins, New Delhi
6. S.M. Kayiran, T. Gumus, P. G. Kayiran, B.Gurakan, “Supernumerary intrathoracic rib,” Archives of Disease in Childhood 2013, Vol. 98( 6), article 441,