



ACCESSORY LOBE OF RIGHT LUNG

Anatomy

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ABSTRACT

INTRODUCTION: Detailed knowledge of Anatomical variations of lungs in form of Accessory lobes and abnormalities in the fissures are important for the surgeon to avoid possible injuries to the neighboring structures, radiologists to be able to correctly interpret radiological images and clinicians in planning segmental resection or pulmonary lobectomy and to have an uncomplicated perioperative outcome.

AIM AND OBJECTIVES: This study was conducted to provide a thorough description on Accessory lobe of Right Lung.

MATERIAL AND METHODS: This study was conducted on 22 pairs of (22 right and 22 left) lungs of formalin fixed human cadaver.

RESULTS: Accessory lobe of Right lung between middle and lower lobe was found in one cadaver. The bronchus, branch of Pulmonary artery and tributaries of Pulmonary vein of Accessory lobe were found to originate from Lower lobe branches and they are not found to be separate. Fissures and Lobes of remaining Right and Left lungs were normal.

CONCLUSION: Anatomical knowledge of Morphological variations of lobes and fissures are essential for Radiologists and Cardiothoracic surgeons. Hence awareness of variations of lobes, like accessory lobe and variations in fissures are important for Cardiothoracic surgeons in identifying Broncho pulmonary segments and for performing lobectomies and surgical resection of individual segments, and for Radiologists in diagnosing Radiological images.

KEYWORDS

Lung, Lobes, Accessory Lobes, Anatomical Variations

1. INTRODUCTION:

Lungs are divided into lobes by oblique and horizontal fissures. Right lung is divided into superior, middle and inferior lobes by an oblique and horizontal fissure. The left lung is divided into superior and inferior lobes by an oblique fissure⁽¹⁾. At the lower end of anterior border of the left lung, the cardiac notch and a small process called lingula is present. Lingula of left lung is regarded as middle lobe of left lung.

The present case describes an accessory lobe between middle and lower lobes of right lung.

An Azygos lobe of right lung affects the upper lobe of right lung, present in 1% of the individuals, where the apex of the lung splits into medial and lateral parts by a fissure. The medial part of split apex forms the lobe of Azygos vein⁽²⁾.

Developmental anomalies of the lungs are important because they can cause complications during infancy, early childhood and adult period. They are classified into bronchopulmonary anomalies, vascular anomalies and combined lung and vascular anomalies. They are classified into bronchopulmonary anomalies, vascular anomalies and combined lung and vascular anomalies.

Development of lung starts at 28 days of embryonic life. During the development as the lungs grow the spaces or fissures that separate the individual broncho pulmonary segments become obliterated except along the two planes oblique or horizontal which give rise to the fissures. Due to partial or incomplete obliteration of spaces leads to incomplete or absent oblique or horizontal fissures. Accessory fissures of the lungs are described as clefts of various depths lined by two layers of visceral pleura. Knowledge of an accessory fissure is helpful for clinicians to differentiate it from other normal anatomical and pathological structures. Incomplete fissure gives an atypical appearance of pleural effusion in X-ray. Accessory fissures fail to be detected on CT scans because of their incompleteness, thick sections and orientation in relation to particular plane. Segmental localization is must in many diseases and accessory fissure and accessory lobe identification is important for the clinician.

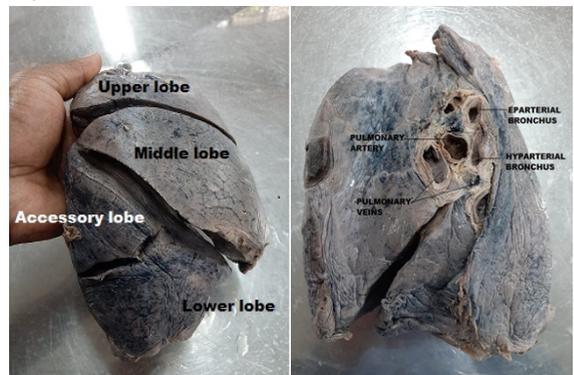
Preoperative planning for pulmonary lobectomy and segmental resection may change during presence of such accessory lobe and fissure. Incomplete fissure is a cause for postoperative air leakage. Pneumonia in particular lobe is often limited to that lobe by the fissures. Pneumonia can be wrongly interpreted as atelectasis or

consolidation. Incomplete fissure is responsible for altering the spread of lung diseases.

2. MATERIAL AND METHODS:

During routine dissection in the department of Anatomy, Osmania Medical College, it was observed that an accessory lobe was present in the right lung in addition to three lobes (superior, middle and inferior). The additional lobe with a small fissure was present between middle and the lower lobe. The bronchus, branch of pulmonary artery and tributary of pulmonary vein of accessory lobe were found to originate from lower lobe branches and they were not found to be separate branches.

Measurement of accessory lobe: Length-9.5cm, Breadth from inside-5cm, Breadth from outside-5.5cm.



3. DISCUSSION:

H.P.Sharma, Manirul islam⁽³⁾ reported an accessory middle lobe between a horizontal fissure and oblique fissure in the left lung which includes the cardiac notch and lingula.

Ashwini.H, Archana.M.hatti et al⁽⁴⁾ reported reported Azygos lobe in the apex of right lung and that was found to be a lobe of Azygos vein of right lung.

Kosuri kalia chakravarthi⁽⁵⁾ encountered an unusual variant lobar pattern of the left lung. The left lung was completely divided by a vertical fissure into anterior and posterior lobes with separate hilum. The anterior lobe of lung was divided into upper and lower lobes by an incomplete oblique fissure.

Gopal Sharma, Tarun vijayvergeya⁽⁶⁾ found an accessory fissure in the left lung which divided the lung into three lobes S.Meenakshi, K. Y.Manjunath and V.Balasubramanyam⁽⁷⁾

reported absent horizontal fissure of right lung about 16.6% and incomplete horizontal fissure of right lung about 63.3%. Incomplete oblique fissure of right lung was about 36.6%. Absent horizontal fissure and incomplete oblique fissure was about 6.66% and incomplete oblique fissure was about 46.6% among thirty pairs of lungs.

But in my study, we found an accessory lobe in the right lung between the middle and lower lobe with presence of four lobes in the right lung. This was not reported in any previous case studies. In the previous case studies, many authors reported Azygos lobe in the right lung, accessory fissure in the left lung which divided the left lung into three lobes and incomplete/absent oblique or horizontal fissures. There was no evidence of accessory lobe in the right lung.

4.CONCLUSION:

Anatomical knowledge of morphological variations of lobes and fissures are essential for Radiologists and Cardiothoracic surgeons. Hence the awareness of variations of lobes like accessory lobe and variations of fissures are important, for cardiothoracic surgeons in identifying bronchopulmonary segments and for performing lobectomies and surgical resection of individual segments and for Radiologists in diagnosing the radiological images.

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