

A Case Report of Lobar Variation of Right Lung

^a Dr. S. Niveditha*,

^b Dr. Rajasree T K,

^a Dr. Padmavathi Mallela.

^a Department of Anatomy, Osmania Medical College, Kothi, Hyderabad, Andhra Pradesh, INDIA.

^b Department of Anatomy, CMR Medical College, Jeedimetla, Hyderabad, Andhra Pradesh, INDIA.

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ABSTRACT

Lungs are vital organs of respiration. Any variations in fissures and lobes are clinically important for identifying broncho pulmonary segments for lobectomies and surgical resections of involved segments, interpreting X- rays & and CT- scans and for academic interest to all medical personnel. In the present case a variation in the lobar pattern of the right lung with three fissures dividing it into 4 lobes was identified in a middle aged male cadaver during routine dissection in the department of Anatomy, Osmania Medical College, Hyderabad.

Introduction:

Normally right lung consist of 2 fissures, oblique and horizontal fissures which divides it into 3 lobes. In this present lung – there was a variation in the lobar pattern of right lung was identified This right lung shows 1 accessory fissure in addition to 2 normal fissures which divides it into 4 lobes. Accessory fissure was identified in the upper part of inferior lobe of the right lung.

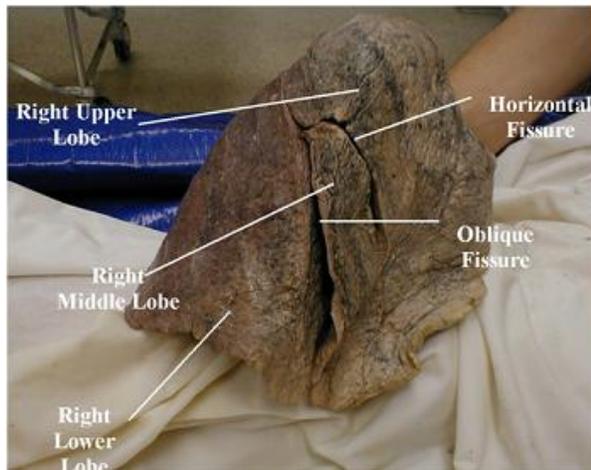
Corresponding author: Dr. S. Niveditha *

E-mail address: snivedithak@yahoo.com

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Normal Right Lung with Two Fissures, Three Lobes



Right Lung Showing 3 Fissures and 4 Lobes



Incidence:

Incidence of superior accessory fissure 5-30% in autopsy studies & 3% in HRCT scan and it is more common in right lung.

Materials & Methods:

- Measuring tape
- Gloves
- Lung
- Tray
- Table cloth
- Forceps

Observations:

Course of Normal Oblique Fissure:

Oblique fissure of right lung begins from the medial surface above and behind the hilum. It passes upward and backwards and cuts the posterior border of right lung 6cm below the apex and 2.5cm lateral to T4 spine.

Then it passes downwards & forwards along the costal surface corresponds to 5th inter costal space in the mid axillary line & cuts the inferior border of the right lung near the 6th costo chondral junction about 7.5cm behind its anterior end and finally reaches the lower and anterior part of hilum.

“In this present lung oblique fissure was Normal.”

Course of Normal Horizontal Fissure:

Horizontal fissure begins from the oblique fissure near midaxillary line & passes horizontally forwards to the anterior border at the level of sternal end of 4th costal cartilage. It separates the upper & middle lobes.

“In this present lung horizontal fissure was Normal.”

Accessory fissure was identified in the upper part of inferior lobe of the right lung. Accessory fissure extended from the oblique fissure 7cm away from the meeting point of oblique fissure and inferior border towards the posterior border of right lung.

Course of an Accessory Fissure



It measured about 10cm in length and 3cm in depth.

Length of Accessory Fissure



Depth of Accessory Fissure



In this present lung hilum of right lung:
Structures within the hilum.

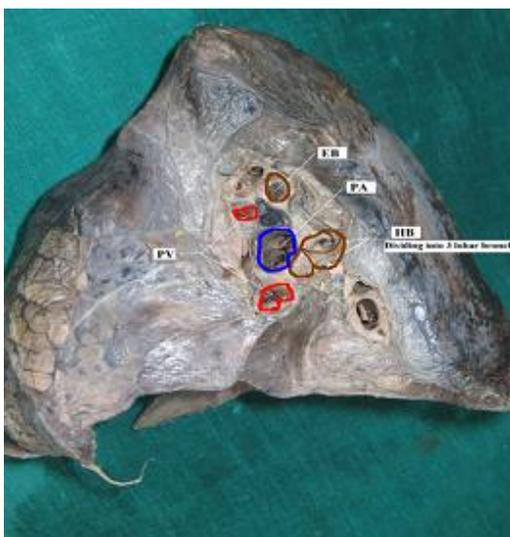
From Above Downwards:

Eparterial bronchus (EB), Pulmonary artery (PA), Hyparterial bronchus (HB) dividing into 3 lobar bronchi, Lower pulmonary vein (PV).

From Before Backwards:

Upper pulmonary vein, Pulmonary artery. Principle bronchus and Bronchial vessels.
 “Left lung was Normal.”

Hilar Structures of Right Lung



Discussion:

The defective pulmonary development gives rise to variations in lobes and fissures of lung.

The fissures are the spaces which separate individual broncho pulmonary segments and they get obliterated except along the two planes which later manifests as horizontal and oblique fissure (Meenakshi, 2004)

Non-obliteration of these spaces gives rise to accessory fissures of the lung (Meenakshi, 2004)

Accessory fissures may be present in any of the five lobes.

Types of Accessory fissures:

Superior Accessory Fissure - Separates the superior segment from the basal segment of lower lobe.

Inferior Accessory Fissure - Separates the medial basal segment from the rest of the lower lobe.

Azygous Fissure - Formed by an invagination of the azygos vein through the right lung apex.

The fissures may be complete or incomplete or absent altogether. (Meenakshi et al 2004)

In case of complete fissures: lobes are held together only at the hilum by bronchi & pulmonary vessels.

In case of incomplete fissures: areas of parenchymal fusion between the lobes.

Conclusion:

Knowledge of an accessory fissure is helpful for clinicians.

1. In order to differentiate it from other normal anatomical and pathological structures.
2. Interpretations of various radiographic appearances of inter lobar fluid.

The knowledge of anatomical variations of the lobes of the lung is important for:

1. Identifying broncho-pulmonary segments.
2. For radiologists interpreting an X-ray or CT scan.
3. Helpful for lobectomies and surgical resections of involved segments (Modgil.et.al.2006).
4. Also of academic interest to all medical personnel.

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