Case Report

Bilobed Right Lung: A Case of Absent Horizontal Fissure

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ABSTRACT

Keywords:
- absent horizontal fissure
- bilobed right lung
- case report

The human lungs are organs of respiration present in the greater part of thoracic cavity on each side of mediastinum. The mediastinum by a narrow root from where the bronchi, blood vessels, lymphatics and nerves enter or leave the lung.[1]

Each principal bronchus divides into three lobar bronchi on the right side and two on the left that enter the lungs through the hilum located in the mediastinal surface. The pattern of bronchopulmonary segments is different in superior lobes of two lungs because of presence of a middle lobe in the right lung and earlier division of principal bronchus as compared to left lung.[2]

The right lung is typically divided into three lobes namely superior, middle and inferior by the oblique and horizontal fissures. The oblique fissure is seen in anterior view of chest radiograph, whereas the oblique fissure is better appreciated on lateral view of chest radiograph.

The anatomical knowledge about the absence of fissures or presence of accessory or incomplete fissures is important prior to performing any pulmonary surgical procedures and also in radiology as these can be misinterpreted on chest radiographs and computed tomography scans.

**CASE:**

The dissection of thoracic region of adult male cadaver was performed according to the guidelines mentioned in Cunningham's Practical Manual and by abiding to the ethical standards at the department of anatomy at Dr. R.P.G.M.C., Kangra at Tanda.

The bilobed right lung with absent horizontal fissure was observed.

The right lung was divided into two distinct lobes, superior and inferior by a single oblique fissure shown in figure 1. The oblique fissure was present at the level of third thoracic vertebra beginning from the posterior border about 6cm below the apex and coursing spirally in the antero-inferior direction. It was a grade-I oblique fissure according to Craig and Walker[5] classification as the fissure was complete and forming two separate lobes. The middle lobe was not seen due to absent horizontal fissure. The lateral and medial bronchopulmonary segments of the middle lobe were a part of superior lobe.

The mediastinal surface and hilar region of right lung had normal morphological features as seen in figure 2.

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The left lung was having one oblique fissure and two lobes with no variation in its anatomy.

**Figure 1: Costal surface of right lung showing only two lobes due to absent horizontal fissure.**

**Figure 2: Mediastinal surface of the bilobed right lung.**

The variations in the fissures such as absent horizontal fissure or presence of accessory fissures are normal and accredited to altered pulmonary development in fetal life. In our case, the right lung had single oblique fissure forming two separate lobes. This is a common variant seen in right lung. Better understanding of these anatomical variations of lungs along with their fissures and lobes is important for surgeons to minimise postoperative complications like air leakage following lobectomies.

**CONCLUSION**

The structural variations in the lungs are due defective obliteration of these fissures either completely or incompletely during development.[8] Earlier in a case study, we have discussed about distinct lobar pattern of right lung having accessory fissures and lobes.[9]

George et al studied morphology of the human lungs in Indian cadavers and observed absence of horizontal fissure in two right lung specimens out of 65 total specimens.[10]

A study conducted by Ughade et al on 50 right lung specimens showed absent horizontal fissure in two cases and incomplete horizontal fissure in 18 lung specimens. All the specimens of right lung had oblique fissure.[11]

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