

Case report

Topographical anatomy of variant fissures in the lingula of lung

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Abstract:

Oblique fissure divides the left lung into upper and lower lobes. A tongue like projection of lung tissue, the lingula is present at the lower end of the anterior border of the left lung. Anomalous fissures in the vicinity of it giving appearance of a bifid lingula is very rare. We report two such cases, the knowledge of which will guide clinicians and surgeons for correct interpretation of lung pathologies and surgical planning.

Key words: Lingula, bifid, fissure, variation

Introduction:

Left lung presents two lobes - upper and lower separated by oblique fissure, which extends from the costal to the medial surface both above and below the hilum¹. It acts as a plane of cleavage during respiration. The anterior border of the left lung forms a cardiac notch. At the lower end of the cardiac notch a small process, the lingula is usually present. Lingula presents two bronchopulmonary segments - superior lingular (IV) and inferior lingular (V)¹.

Anomalies pertaining to the lingula are rare. Anatomical knowledge of presence, absence and variations of lingula may be beneficial for surgeons operating on the lungs and the radiologists interpreting skiagrams in day to day clinical practice.

Case report :

During routine undergraduate dissection classes, variant fissures were present in the territory of the lingula of left lung of two cadavers. Morphometric

measurements were taken. The lungs were studied in detail and the specimens were photographed.

Each of the two left lungs displayed an accessory fissure arising from the anterior border dissecting the lingula and giving it a bifid appearance. In the first specimen it measured 2.5 cm (Figure 1) and in the second it was 2 cm (Figure 2).

Another fissure starting from the oblique fissure ran horizontally on the costal surface of the lingula in both the specimens and stopped short of the anterior border of the lungs. The length of this accessory fissure was 2.5 cm in the first specimen (Figure 1) and 4.5 cm in the second (Figure 2).

Discussion:

The fissures which separate the bronchopulmonary segments become obliterated except along the planes which in developed lung presents as an oblique or horizontal fissure. It has been thought that the accessory fissures are the result of the spaces which have failed to obliterate². Any variation in the

morphological pattern of the fissures indicate variations from normal pattern of development of lung³.As the lingula houses two bronchopulmonary segments,so any abnormal fissure in the lingula might alter the position of the segments leading to erroneous resection at the time of surgery.

Das S et al⁴ described a high up lingula above the termination of oblique fissure on the anterior border of the left lung. There is paucity of information on the anomalous lingula. During interpretation of skiagrams, abnormal position of fissures in lingula may result in wrong interpretation as lingula is taken as a landmark. From the radiological view point ,accessory fissure is important as it can be mistaken for a lung lesion⁵.

Accessory fissures in the territory of the lingula is an uncommon entity. During respiratory movement ,

inferior border of lung has an excursion of about 5-8 cm⁶. Any anomaly in the lower border like anomalous fissure arising from it as in the above cases has clinical significance⁴. Knowledge of variant fissure is of utmost importance in segmental localization. Pre operative planning and strategy for surgical resection may be altered due to the presence of such fissures⁷. Often accessory fissure act as barriers to the spread of infection, creating a sharply marginated pneumonia ,which can wrongly be interpreted as atelectasis or consolidation⁸. Awareness of variant fissures is very important to radiologists for interpretation of skiagrams and to cardiothoracic surgeons for proper planning of lung resections.

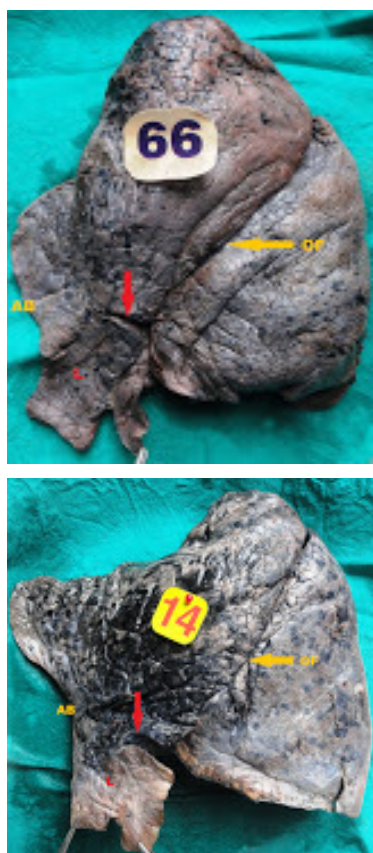


Figure 1- Yellow arrow indicates oblique fissure (OF),red arrow indicates accessory fissure (AF), anterior border denoted by AB ,L indicates bifid lingula displayed by forceps.

Figure 2- Yellow arrow indicates oblique fissure (OF),red arrow indicates accessory fissure (AF), anterior border denoted by AB ,L indicates bifid lingula displayed by forceps.

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