Widening of the Subcarinal Angle: Another Cause

To the Editor,

The subcarinal angle (SCA) is the angle between inferior borders of right and left main bronchi. In the literature, there is wide range of the normal value for SCA, about 35-99.[1-3]

Widening of the subcarinal angle is one of the radiologic signs in frontal chest X-ray. Although, its usefulness has not been affirmed; it could be a manifestation of heart, lung, or mediastinal pathology. Some pathological causes of the SCA widening include left atrial enlargement, subcarinal mass, enlarged subcarinal lymph nodes, mediastinitis, bronchogenic cyst, or pericardial effusion.[4, 5]

In this way, we would like to present lung fibrosis as another cause that no one to the best of our knowledge has focused directly on. In fact, some authors only stated that lung fibrosis might distort bronchial anatomy and influence subcarinal angle.[1,3]

Recently, a case of the SCA widening came to our notice. He had fibrotic changes in both lungs which were believed to be the reason for the SCA widening.

A 40-year-old man with bilateral lung fibrosis and esophageal diverticulum admitted for surgical treatment of the diverticulum. His frontal chest X-ray (Fig 1) revealed bilateral lung fibrotic changes with elevation of the both hila and SCA widening (about 117°). Furthermore, there was no evidence of cardiomegaly, pericardial effusion, or lobar collapse on chest X-ray. In addition, there was no subcarinal lymphadenopathy on spiral chest CT scan of the patient (not shown).

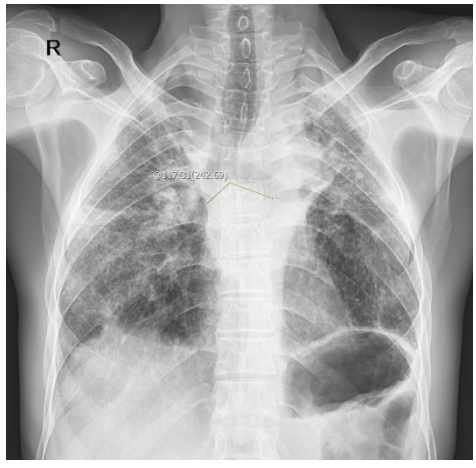

Fig 1. Chest X-ray shows bilateral lung fibrotic changes with elevation of the both hila and subcarinal angle widening.

In conclusion, bilateral lung fibrosis should be remembered among the other causes of SCA widening which can almost be recognized on plain film.

Mohammad Reza Sasani, M.D.

Assistant Professor, Medical Imaging Research Center, Department of Radiology, Shiraz University of Medical Sciences, Shiraz, Iran.

E-mail: sasanimrz@gmail.com

Siriraj Med J 2017;69: 231
Received 26/7/2017 Revised 28/7/2017 Accepted 31/7/2017
doi:10.14456/smj.2017.47

REFERENCES

1. Chunder R, Guha R. A morphometric study of human subcarinal angle in different age groups in both sexes and its clinical implications. Indian J Basic Appl Med Res 2015;4:424-30.
2. Haskin PH, Goodman LR. Normal tracheal bifurcation angle: a reassessment. AJR Am J Roentgenol 1982;139:879-82.
3. Murray JG, Brown AL, Anagnostou EA, Senior R. Widening of the tracheal bifurcation on chest radiographs: value as a sign of left atrial enlargement. AJR Am J Roentgenol 1995;164: 1089-92.
4. Laroia AT, Thompson BH, Laroia ST, van Beek EJR. Modern imaging of the tracheo-bronchial tree. World J Radiol 2010;2: 237-48.
5. Chen JT, Putman CE, Hedlund LW, Dahmash NS, Roberts L. Widening of the subcarinal angle by pericardial effusion. AJR Am J Roentgenol 1982;139:883-7.