A 22-year-old male patient presented with high grade fever and cough for 2 weeks duration. He had scanty expectoration and mild shortness of breath for the same duration. He was non-diabetic and had no history of chest trauma or contact with any patient of tuberculosis. Sputum for AFB was negative in three consecutive samples. Blood sugar was normal. ELISA for HIV (I and II) was negative. After straight X-ray chest and aspiration of pus, he was misdiagnosed to have pyopneumothorax (Fig. 1). Intercostal tube drainage was given along with broad-spectrum antibiotics. Subsequent chest X-ray showed that the tube occupied a giant cyst in left lung in a rounded manner (Fig. 2). Repeat chest X-ray (Fig. 3) and CT scan of thorax (Fig. 4 and 5) showed a well-defined thin-walled giant solitary cystic space in the lower lobe of the left lung with no evidence of rupture. The case was finally diagnosed as an infected giant congenital lung cyst.

Lung cysts are defined as air-containing spaces in lung parenchyma surrounded by a relatively thin (≤ 4 mm) wall. It is useful to distinguish lung cysts from cavities (air-
containing lesions with a relatively thick > 4 mm, wall i.e., or within an area of a surrounding infiltrate or mass) and to categorise them as focal or multifocal from diffuse in distribution. Focal or multifocal cystic lesions in lung include congenital lung cysts, traumatic cysts, and infectious causes including coccidioidomycosis, pneumocystis carinii pneumonia, and hydatid disease. Malignant lesions rarely present as cystic lesions. Diffuse cystic disease is classically associated with pulmonary Langerhans cell histiocytosis (PLCH), lymphangioleiomyomatosis (LAM) and tuberous sclerosis. Congenital parenchymal cysts (simple lung cysts) arise from any of the parenchymal tissues of the lung. The composition of the cyst wall is determined by its origin: bronchial glands, cartilage, or alveolar epithelium. Incidence and prevalence of lung cysts are not exactly known. Papagiannopoulos et al reported from their surgical experience in a small series where the simple cysts were the commonest cystic lung lesions in adults (40%). Simple cysts are unilocular and confined to a single lobe, commonly the lower lobe. Cysts may remain asymptomatic or enlarge resulting in respiratory distress. Cysts may also be infected. Chest X-ray is usually adequate for diagnosis. Infected giant lung cyst radiologically may resemble pyopneumothorax and should be assessed carefully to avoid misdiagnosis.

Other congenital cystic lung lesions are bronchogenic cysts, pulmonary sequestrations, and congenital cystic adenomatoid malformations (CCAM). A bronchogenic cyst is thought to develop as a diverticulum of the primitive foregut. Most are right-sided, midline, and in close proximity to the tracheobronchial tree. They can also migrate to the periphery. Approximately two-third of these are within the mediastinum, and one-third are intraparenchymal. They may contain normal tracheal tissue including mucus glands, elastic tissue, smooth muscle, and cartilage. Radiologically intra-pulmonary bronchogenic cysts are mostly opaque as they contain mucoid material and retained secretions. Rarely small patent bronchial communication is there and then the cyst appears air-filled. Bronchogenic cysts contain air-fluid level when infected. Sequestrations can be intra-lobar (anomalous parenchyma contained within visceral pleura), or extra-lobar (with a separate pleural covering). Sequestration appears as a persistent opacity or mass usually in the left lower lobe and contains air when infected. CCAM may present as a mass lesion with variable numbers of solid and cystic components. CCAM communicates with the bronchial tree and so contains air. CCAMs are often mistaken for congenital diaphragmatic hernia. Stocker classified three types of CCAMs: type I consists of large cysts, type II consists of small cysts, and type III shows homogeneous mass with cysts seen on microscopy. These cysts are lined with ciliated columnar/pseudostratified columnar epithelium with mucous secreting cells. Absence of hyaline cartilage in the wall differentiates it from bronchogenic cyst. In type I CCAM, a large dominant cyst is surrounded by smaller cysts; but when the cystic lesion is single, the differential diagnosis with the congenital parenchymal cysts and bronchogenic cysts may not be possible radiologically and therefore histopathologic examination is needed.

PLCH is a smoking-related diffuse lung disease affecting...
males of 20 to 40 years age. The combination of satellite nodules, bizarre-shaped upper zone cysts, preservation of lung volume and sparing of costophrenic angles are characteristics of PLCH. Pulmonary LAM occurs in females of child-bearing age. Progressive proliferation of spindle cells (resembling smooth muscle cells) along the bronchioles leads to air trapping and development of thin-walled lung cysts. Rupture of these cysts can result in recurrent pneumothorax. Chylos pleural effusion may also be present. HRCT shows uniform thin-walled cysts in a diffuse distribution without zonal predominance. In tuberous sclerosis, lung disease appears similar to LAM but can also be seen in males.

True lung cysts need to be distinguished from emphysematous bullae (no visible walls), dilated airways (continuity and elongation of dilated airways on contiguous slices) and pneumatoceles. Pulmonary pneumatoceles can be single but more often are multiple, thin-walled, air-filled, cyst-like cavities. They may contain fluid levels. Initial chest X-ray often reveals pneumonia without evidence of pneumatocele. Parapneumonic effusion or empyema can be present.

Radiographic evidence of pneumatocele occurs usually on fifth to seventh day of hospitalisation. Pneumatoceles disappear within months after the pulmonary infection subsides.

Solitary congenital cysts can be treated with cystectomy or lobectomy if necessary. Lung cysts are often found to be CCAMs during surgery, though simple cysts do occur. Infected solitary cysts are treated with antibiotics and resected when quiescent. Multiple cysts are treated as part of underlying systemic disease. Surgical intervention is contraindicated for pneumatoceles. Chest tube insertion is discouraged, as this can result in empyema.

References