Empyema Thoracis Presenting as Abdominal Mass

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A 52 year old diabetic woman presented with abdominal pain and altered consciousness for three days. Abdominal ultrasonographic screening at the emergency revealed a heterogeneous mass in right kidney.

Further investigations revealed total leukocyte count of 22000/cmm with 83% neutrophils. Urine routine examination was normal with no pus cells. Urine culture was also negative. Blood C-reactive protein was 38 mg/dl (N<0.6).

The patient initially responded to antibiotic therapy with improvement in consciousness status. But the abdominal pain persisted and she also had fever (100–102°F). The total leukocyte count also remained persistently high on Day 3. In view of that, an abdominal CT scan with contrast was done which revealed (Figure 1) right sided pleural collection and a collection behind right kidney. Anatomical continuity between the two collections was noted in the scan (pink arrows). CT scan also revealed that the mass was compressing the right kidney but not involving it. The collection fluid had CT density of 20-25 HU. Ultrasonography guided aspiration from the retro-kidney mass revealed frank pus (Figure 2). Similar pus was also aspirated from right pleural space. Culture of the pus from both sites grew Klebsiella sp.. Appropriate antibiotics were given, based on sensitivity reports, for 4 weeks.

Empyema thoracis, or pus in the pleural cavity, may sometimes track into different other areas. The commonest ectopic site of presentation is the chest wall, where the underlying empyema may present as intermittent mass, called empyema necessitans¹. Empyema has been reported to present as right upper abdominal mass. Other rare sites of spontaneous drainage of empyema include breast, spinal
column, retroperitoneum, esophagus and pericardium. Usually, CT scan is a viable technique to identify the connection between empyema and the abdominal pus collection.

In florid cases of empyema, such ectopic drainage is not difficult to diagnose. But in cases like ours, where the ectopic site of pus collection is the first presentation, a high degree of suspicion is needed. CT scan is a very valuable method of detection of pus collections in body cavities along with their connections to other cavities or areas. Unless all the pus collections are drained simultaneously, the sepsis state will not be resolved.

The route of tracking of empyema pus into abdominal cavity is varied. Anteriorly it may go through foramen of Morgagni. Posteriorly the endothoracic and transversalis fasciae are continuous and act as a route of tracking of pus or fluid.

References