The Rivulet Sign

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A twenty-four-year-old man was referred to us in view of high grade fever, breathlessness, right-sided pleuritic chest pain, dry cough since 2 months and abdominal pain since 6 months. He was a chronic-alcohol-consumer. Examination revealed fever, tachycardia, tachypnea, signs of right massive pleural effusion, abdominal distension and tenderness. The blood investigations including serum amylase were normal. The pleural fluid analysis confirmed pancreatitis-associated-empyema with high pleural fluid amylase (13705U/L). Contrast-Enhanced-Computed-Tomography (CT) of thorax & abdomen was reported as acute-on-chronic pancreatitis with intra and peripancreatic, posterior mediastinal collections, minimal pericardial, right pleural effusion with a pancreatico-pleural fistula (PPF) extending through the diaphragmatic hiatus connecting the mediastinal pleura and the intrapancreatic collections. The CT-sagittal-reconstruction image demonstrated the PPF which appears like a small stream of water (figure, red arrow). Hence we it named "The Rivulet Sign". He was managed with intercostal drainage, broad spectrum antibiotics and octreotide with resolution empyema and closure of the fistulous tract.

PPF is a complication of acute/chronic pancreatitis. It develops due to leak from an incompletely formed or ruptured pseudocyst or direct pancreatic duct leak. The duct disrupts posteriorly, pancreatic secretion flows through diaphragmatic hiatus into mediastinum/pleura forming a PPF.[1] High clinical suspicion and pleural fluid amylase clinches the diagnosis. CT demonstrates the fistula in 50% and endoscopic-retrograde cholangiopancreatography (ERCP) or magnetic-resonance-cholangiopancreatography (MRCP) in 80%.[2] Treatment modalities include (1) octreotide and thoracentesis, (2) ERCP with stent placement, (3) surgery.[1] Our case highlights the rare complication of PPF with a novel radiologic sign "The Rivulet sign".

Conflicts of interest. None.

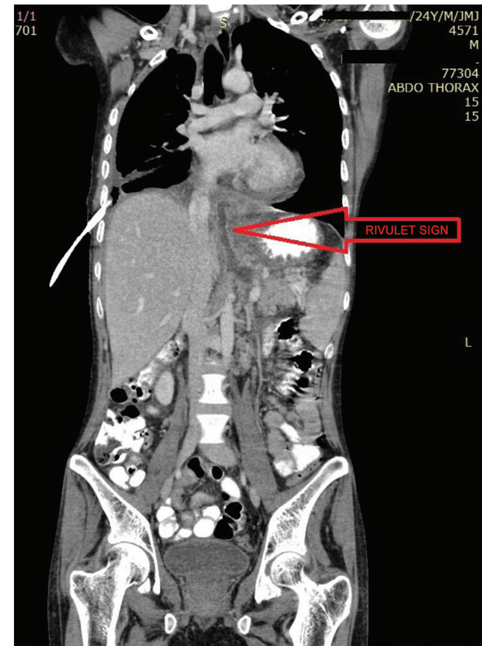

FIGURE 1. HRCT was performed showing severe bilateral cystic bronchiectasis lesions affecting all lobes, more excessive in middle lobe, lingula and lower lobes bilaterally.

REFERENCES

1. Machado NO. Pancreaticopleural Fistula: Revisited.Diagnostic and Therapeutic Endoscopy 2012; Article ID 815476, 5 pages, 2012. doi:10.1155/2012/815476 accessed from http://www.hindawi.com/journals/dte/2012/815476/cta/ on 16th July 2016.
2. Ali T, Srinivasan N, Le V, Chimpiri AR, Tierney WM. Pancreaticopleural fistula. Pancreas 2009; 38:e26-31.

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