Hydropneumopericardium

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Fig. 1: X-ray chest, PA view showing cardiomegaly with air fluid levels

Fig. 2: X-ray chest in lateral decubitus posture, showing shifting of air fluid levels

1 year male presented with pain in epigastrium and cough for two weeks. He also had dyspnoea for same duration, which was more on lying down. On examination, his BP was 94/74 mm Hg, Pulse 92/min, with presence of pulsus paradoxus, respiratory rate was 28/min. His JVP was 10 cm above the sterna angle. Apex beat was not palpable. Heart sounds were feeble and there was presence of pericardial friction rub. ECG showed sinus tachycardia with heart rate of 100/min, regular, with normal voltage. He was subjected to X-ray of chest P/A view, which showed air fluid level within the cardiac shadow (Figure 1). Suspecting hydropneumo pericardium, he was subjected to X-ray of chest in lateral decubitus position. There was shifting of air fluid level (Figure 2). Echocardiography showed presence of pericardial effusion, and on shaking the patient, air bubble could be appreciated. CT scan of Chest showed suggestion of communication of pericardial cavity with esophagus (Figure 3). Endoscopy showed suggestion of esophageal tear with regular margins. Pig tail drainage of pericardial cavity was done. It showed proteins 3.5 gm%, no sugar, WBC 4800/cubic mm, mostly lymphocytes and adenosine deaminase level was 64 IU/L. Culture of fluid was sterile. The patient also subjected to esophageal covered stent implantation (Figure 4). No antibiotics were given. He was put on antitubercular treatment but died after around one week.

Spontaneous pneumopericardium is a rare event, several causes have been proposed. These include trauma, infectious secondary to gas-producing bacilli in the pericardial fluid, fistula formation-secondary to perforation of a neighbouring viscus such as oesophagus, stomach, liver abscess or bronchus and iatrogenic, secondary to pericardiectomy, and assisted positive pressure ventilation.1 Infection spreading to the pericardium following oesophageal perforation is usually devastating, with a survival rate of only 17 percent in one review of 60 such patients.2 Spontaneous pyopneumopericardium is reported following bacterial infection also.3

The first report of an esophago-pericardial fistula was published in 1838 and in a recent review by Hamid et al4 less than 100 cases have been reported to date, most of them in adult patients. Mortality rate was very high in the past (83% as reported by Miller) and we think this is in accordance with diagnostic delay, development of purulent pericarditis, severe sepsis and previous general health deterioration.

Several factors can influence the choice of the surgical technique: size of the fistula, coexistence or not of purulent pericarditis, primary disease, esophageal impairment and technological resources availability in the setting. General support and broad-spectrum antimicrobial therapy complete the tripod upon which patient’s life is kept, but early diagnosis and treatment is still the key for survival. Thus a greater clinical awareness is needed.

References


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Received: 05-10-2016; Accepted: 30-03-2017