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Hydropneumopericardium after pericardiocentesis in a transplant patient

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A 52-year-old man, known for intestinal transplantation of a mesentery desmoid tumor, chronic pericardial effusion repeatedly drained, presented with upper gastro-intestinal bleeding on severe gastric polyposis and bacterial translocation. Transthoracic echocardiography showed severe circumferential effusion measuring up to 2.6 cm (1.6 cm toward the needle), with echocardiographic signs of tamponade, indicating pericardiocentesis.

Through subxiphoid puncture, 860cc of citrine liquid was retrieved. The drain was left in place. Control chest X-ray showed hydropneumopericardium (Fig. 1A, B). On computed tomography (CT)-scanner, the drain crossed the left hepatic lobe, followed the heart's inferior wall with its distal end in the pericardial cavity (Fig. 1C). Fistula with air-containing cavities was excluded. Daily aspiration removed 420cc of citrine fluid with air. The drain was removed at day 4. Radiographic follow-up showed diminution of air and liquid (Fig. 1D, E). Cytologic examination found reactionary mesothelial cells and microcalcifications.

Hydropneumopericardium is caused by trauma, infection secondary to gas-producing bacilli, fistula with adjacent air-containing organs, barotraumas (positive pressure ventilation, mostly in neonates). It can develop after procedures (e.g., pericardiocentesis, endotracheal intubation, thoracotomy, pneumectomy) or spontaneously. Herein, fistula was excluded on CT-scan. No air was insufflated during insertion or through drain misuse. In the absence of other etiology, the most likely cause is iatrogenic, considering the unusual path of the drain. Chronic pericardial effusion and its inflammatory nature could have favored a reshaped hardened fibrous pericardium, prompt to fistulize or unable to adhere to its serous part.

Complications of hydropneumopericardium include pericarditis, tension and tamponade. Easily diagnosable, it should be suspected when dyspnea follows a brief relief after pericardiocentesis.

Conflict of interest: None declared

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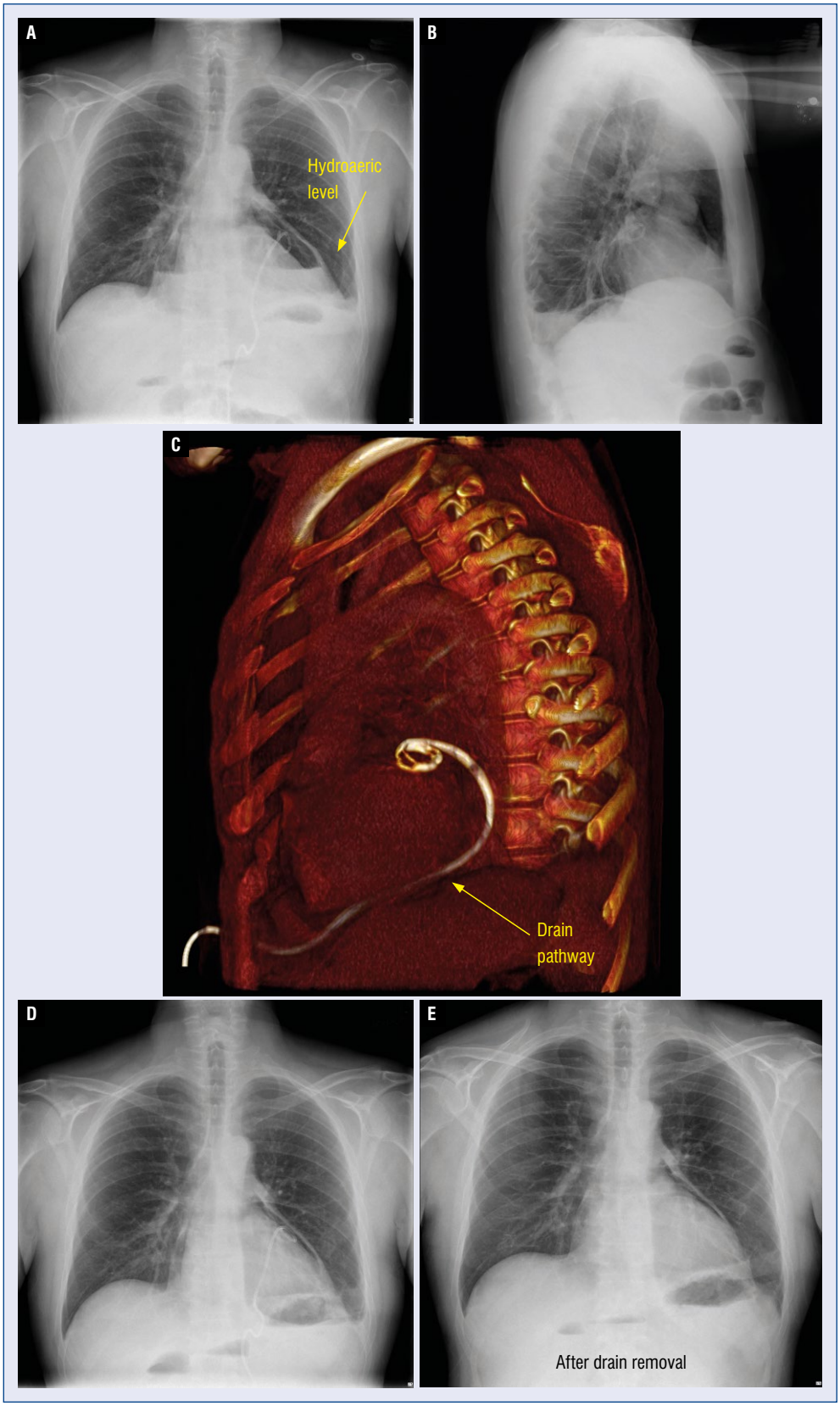

Figure 1. Chest X-ray after pericardiocentesis: front (**A**) and profile (**B**). Three-dimensional non injected computed tomography-scan reconstruction from a lateral angle showing drain pathway (**C**); **D.** Chest X-ray before drain removal on day 3; **E.** Chest X-ray after drain removal.