

Bilateral Hydrothorax and Pneumomediastinum Caused by Parenteral Nutrition Extravasation From A Jugular Vein Venous Central Catheter: A Rare Presentation Of Acute Respiratory Failure

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Received: 19 Apr 2021
Accepted: 10 May 2021
Published: 15 May 2021

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Citation:

Duran H, Bilateral Hydrothorax and Pneumomediastinum Caused By Parenteral Nutrition Extravasation From A Jugular Vein Venous Central Catheter: A Rare Presentation Of Acute Respiratory Failure. *Ame J Surg Clin Case Rep.* 2021; 3(3): 1-3.

Keywords:

General Surgery; Drugs; Pneumomediastinum

1. Background

Total Parenteral Nutrition (TPN) is the most widely used system to artificially feed patients due to impaired oral intake secondary to insufficient or predictably deficient intestinal absorption [1].

TPN objectives are these: 1- to minimize the negative balance trying to satisfy all the caloric-protein and hydro electrolytic needs, 2- to maintain the immune function, and 3- to improve and shorten the postoperative recovery of patients by reducing their hospital stay [2,3].

The major complications rate is 6.7%, usually related to metabolic, septic, or mechanical problems, all of them attributed to implantation maneuvers or catheter location [4,5].

2. Case Presentation

A 62-year-old female with no relevant past medical history and recent diagnosis of pancreatic cancer located in head, was referred to the General Surgery Department. An uneventful Whipple's resection was performed, being discharged from ICU in the second PO day.

In 14th PO day a Venous Central Catheter (VCC) through left jugular vein was placed again (previously VCC was retired from right

jugular vein on 11th day), after a grade B delayed gastric emptying [6] responsible for vomiting and nausea that impaired normal oral feeding.

After 48h, the patient began with sudden chest pain, dyspnea, tachypnea, and desaturation, demanding an urgent thoraco-abdominal CT (Figure 1).

The patient was readmitted to the ICU requiring endotracheal intubation and placement of a bilateral chest drain (Figure 2). Biochemical analysis of the thoracic drainage resulted in: Triglycerides > 1296 mg / dL, Glucose 423 mg / dL, Amylase 17 U / l, Total bilirubin 0.32 gr / dL, and Cholesterol 32 mg / dL. Once the patient was stabilized, a conventional X-ray image was obtained after the introduction of intravenous contrast through the distal lumen of the VCC placed in the left jugular vein, resulting in extravasation of the contrast in the mediastinum.

The patient was readmitted again to conventional hospitalization after seven days, time enough for recovering after tracheal tube weaning, and gradual reduction of vasoactive drugs.

35 days after the hospital incoming the patient was successfully discharged in good general conditions, with complete ventilatory restoration, and excellent oral tolerance.

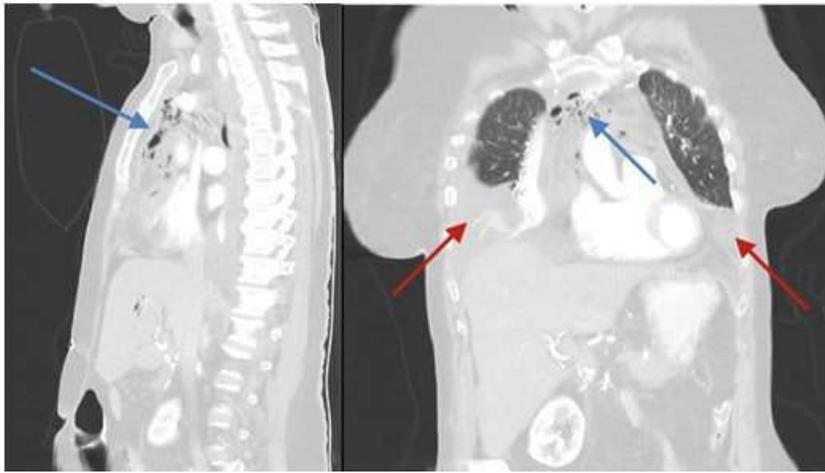


Fig 1: Thoraco-abdominal CT scan. 1a: sagittal view. 1b: coronal view. Blue arrows: pneumomediastinum. Red arrows: pleural effusion



Fig 2: Pleural effusion milky aspect



Fig 3: X-Ray chest film: extravasation of the contrast in mediastinum

3. Discussion

In the postoperative period of a non-past cardiopulmonary disease patient, the onset of a sudden respiratory failure after a VCC placement, even though it has been placed in the jugular vein can always be related with the placement itself. This condition should be taken constantly in consideration, every time the potential solution can be established immediately. The ubication in the jugular vein safely rules out the presence of a pneumothorax, so we must consider other associated complications.

The supracardiac location pneumomediastinum, the presence of bilateral pleural effusion, the milky appearance of the pleural drainage and its biochemical analysis, clearly guided us to the presumptive diagnosis of the patient [7]; finally, the presence of the extravasated contrast in the mediastinum after the X-Ray chest film confirmed the definitive diagnosis: Bilateral hydrothorax and pneumomediastinum caused by the TPN extravasation from the VCC inflow.

References

1. Tomas M, Juan EP, Creda SMA. Complicaciones de la nutrición parenteral periférica: Observación clínica de 2 casos. *Enferm Intensiva*. 2014; 25: 30-4.
2. Tahull MB, Talaveron JL. Nutrición en el paciente quirúrgico. *Cir Esp*. 2014; 92: 377-378.
3. Haro M, Núñez A, Martínez-Moratalla J. Mediastinitis y derrame pleural secundarios a la extravasación de una nutrición parenteral. *Archbronconeumol*. 1998; 34: 271-72
4. Wakshlag J, Schoeffler GL, Russell DS, Peters-Mo RS, Toulza O. Extravasation injury associated with parenteral nutrition in a cat with presumptive gastrinomas. *J Vet Emerg Crit Care*. 2011; 21: 375-81.
5. Lopez RG, Garcia MIT, Vigo MS, Val JFA. Right hydropneumothorax due to enteral feeding. Nasogastric tube in- side airway. *Rev Esp Geriatr Gerontol*. 2012; 47: 87-8.
6. Wente MN, Bassi C, Dervenis C, Fingerhut A, Gouma DJ, Izbicki JR et al. Delayed gastric emptying after pancreatic surgery: a suggested definition by the International Study Group on Pancreatic Surgery. *Surgery*. 2007; 142: 761-8.
7. Agudelo S, Maldonado MJ, Botero J. Hidroneumotórax secundario a extravasación de nutrición parenteral al espacio pleural: informe de caso. *Rev. Colomb. Enferm*. 2016; 12: 77-82.