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The significance of clinical awareness of anatomical variations

Dear editor,

So far, diverse congenital anatomical variations have been recognized as a consequence of failed developmental process during early embryogenesis [1, 2]. Despite the fact that they are frequently depicted on imaging, they represent an underestimated entity [1, 2]. Recently, we incidentally detected a form of heterotaxy syndrome, left isomerism, known also as polysplenia syndrome in a 56-year-old man, a current smoker who referred to our ambulatory for smoking cessation after performing routinely a chest computed tomography (CT). His medical history was not significant for any medical disease, and he was completely asymptomatic. More particularly, CT revealed that there was an azygos continuation of the inferior vena cava, multiple splenules without a parent spleen, while both lungs were bilobed, characterized by the presence of a long bronchus (Figure 1) [3, 4]. The patient did not have a horizontal fissure in the right lung and there was no middle lobe. Left isomerism is characterized by the presence of abdominal and chest abnormalities, including agenesis of the upper abdominal part of inferior vena cava with azygos continuation, multiple splenules, and bilateral bilobed lungs. It can be associated with congenital heart disease, dextrocardia, and other gastro-intestinal and genito-urinary anomalies [3, 4].

We would like to underline the importance for respiratory physicians to be aware of the anatomical variations and abnormalities that are encountered in everyday clinical practice in order to be able to early recognize them. The importance of having in mind the anatomical



Figure 1. Chest computed tomography revealed an azygos continuation of the inferior vena cava, multiple splenules without a parent spleen. A calcified echinococcus cyst in the liver is also present

variations has become more and more evident during the pre-operative assessment when undergoing surgery [5]. However, such abnormalities are often underestimated. Clinical suspicion and the counterpart imaging findings play a crucial role in their diagnosis. As deficiency in anatomy knowledge contributes to medical errors and malpractice, we should emphasize the impact that anatomy awareness may have in safer clinical practice, leading to a high level of diagnostic and therapeutic management.

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Conflict of interest

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References:

1. Porres DV, Morenza OP, Pallisa E, et al. Learning from the pulmonary veins. *Radiographics*. 2013; 33(4): 999–1022, doi: [10.1148/rg.334125043](https://doi.org/10.1148/rg.334125043), indexed in Pubmed: [23842969](https://pubmed.ncbi.nlm.nih.gov/23842969/).
2. Demos TC, Posniak HV, Pierce KL, et al. Venous anomalies of the thorax. *AJR Am J Roentgenol*. 2004; 182(5): 1139–1150, doi: [10.2214/ajr.182.5.1821139](https://doi.org/10.2214/ajr.182.5.1821139), indexed in Pubmed: [15100109](https://pubmed.ncbi.nlm.nih.gov/15100109/).
3. Applegate KE, Goske MJ, Pierce G, et al. Situs revisited: imaging of the heterotaxy syndrome. *Radiographics*. 1999; 19(4): 837–52; discussion 853, doi: [10.1148/radiographics.19.4.g99jl31837](https://doi.org/10.1148/radiographics.19.4.g99jl31837), indexed in Pubmed: [10464794](https://pubmed.ncbi.nlm.nih.gov/10464794/).
4. Kobayashi H, Kawamoto S, Tamaki T, et al. Polysplenia associated with semiannular pancreas. *Eur Radiol*. 2001; 11(9): 1639–1641, doi: [10.1007/s003300000757](https://doi.org/10.1007/s003300000757), indexed in Pubmed: [11511883](https://pubmed.ncbi.nlm.nih.gov/11511883/).
5. Raikos A, Smith JD. Anatomical variations: How do surgical and radiology training programs teach and assess them in their training curricula? *Clin Anat*. 2015; 28(6): 717–724, doi: [10.1002/ca.22560](https://doi.org/10.1002/ca.22560), indexed in Pubmed: [25974002](https://pubmed.ncbi.nlm.nih.gov/25974002/).