

## Fetal echocardiography is not only used to detect congenital heart disease but also to monitor fetuses, especially those with different pathologies

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We have read with great interest the article by Buczyński et al. [1] entitled "Life-threatening congenital hydropericardium in a newborn with Down syndrome, transient abnormal myelopoiesis, Hirschsprung disease, and a ventricular septal defect". We would like to congratulate the authors on detecting prenatally a congenital heart defect and on their effort to publish such an interesting case. It is worth commending the authors' clinical experience with successful neonatal pericardial drainage. On the other hand, we would like to point out that some procedures described as "urgent" could have been predicted and "planned".

The authors presented the case of a neonate with prenatally diagnosed ventricular septal defect (VSD) with hydropericardium, who was delivered by Cesarean section at 37 weeks of gestation. Unfortunately, the manuscript lacks basic data, as mentioned below: gestational age at diagnosis of the congenital heart defect, more detailed description of fetal cardiovascular function during gestation, number of fetal echocardiographic examinations and strategy of fetal monitoring, fetal cardiovascular physiology changes with gestation, and indication for Cesarean section. As recommended by the Polish Society of Prenatal Cardiology, every congenital heart defect detected prenatally should be monitored using fetal echocardiography [2]. Contemporary fetal echocardiography focuses not only on the analysis of the heart structure but also on the assessment of its function. The evaluation of the fetal heart function is most

valuable in the third trimester of pregnancy, just before delivery [2]. If the fetus, especially with a congenital heart defect or functional anomalies, is monitored for several weeks using fetal echocardiography, and the last examination is performed shortly before delivery, the condition of the newborn in the first hours and days of extrauterine life can be reliably predicted [2, 3]. Life-threatening congenital hydropericardium is an extremely rare condition and may be caused by infection, cardiac masses like tumors, and other chronic diseases, as mentioned by the authors. In each case, the cause of hydropericardium should be thoroughly searched. Hydropericardium could also occur along with genetic disorder such as Down syndrome. More detailed serial echocardiographic monitoring could have also had additional advantages — abnormal results of echocardiographic examination could be the indication for expanded "genetic ultrasonography", and other signs (VSD was noticed) of trisomy 21 could have been detected earlier. Any congenital heart defect detected prenatally should be closely examined, even during the COVID-19 pandemic [4]. In the current era of dynamic development of prenatal cardiology [5], the absence of at least two echocardiographic examinations in the case of timely prenatal detection of a congenital heart defect should be highlighted and reconsidered next time. Probably, we should pay more attention to the prenatal period of human life. Maybe in this case the postnatal tachycardia, central cyanosis, and transient hypoxia could have been avoided.

## Article information

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## REFERENCES

1. Buczyński M, Karolczak MA, Mądry W, et al. Life threatening congenital hydropericardium in a newborn with Down syndrome, transient abnormal myelopoiesis, Hirschsprung disease, and a ventricular septal defect. *Kardiol Pol.* 2022 [Epub ahead of print], doi: [10.33963/KP.a2022.0099](https://doi.org/10.33963/KP.a2022.0099), indexed in Pubmed: [35393632](https://pubmed.ncbi.nlm.nih.gov/35393632/).
2. Sokołowski Ł, Słodki M, Murlewska J, et al. Fetal echocardiography in the 3rd trimester of pregnancy as an essential element of modern prenatal diagnostics and perinatal care – recommendations of Polish Society of Prenatal Cardiology 2020. *Prenatal Cardiology.* 2020; 2020(1): 5–12, doi: [10.5114/pcard.2020.102272](https://doi.org/10.5114/pcard.2020.102272).
3. Słodki M, Respondek-Liberska M. Fetal echocardiography: One of the most important tools in fetal diagnosis and assessing wellbeing. *J Clin Ultrasound.* 2022; 50(5): 636–638, doi: [10.1002/jcu.23216](https://doi.org/10.1002/jcu.23216), indexed in Pubmed: [35674056](https://pubmed.ncbi.nlm.nih.gov/35674056/).
4. Sylwestrzak O, Respondek-Liberska M. Prenatal ultrasound evaluation in the current era of COVID-19 – looking only for major congenital defects or subtle sonographic and echocardiographic findings, as well? *Prenatal Cardiology.* 2020; 2020(1): 50–56, doi: [10.5114/pcard.2020.95250](https://doi.org/10.5114/pcard.2020.95250).
5. Słodki M, Copel JA, Rizzo G, et al. Fetal cardiology: is it time to establish a separate independent medicine subspecialty? *Pediatr Cardiol.* 2022 [Epub ahead of print], doi: [10.1007/s00246-022-02936-7](https://doi.org/10.1007/s00246-022-02936-7), indexed in Pubmed: [35606573](https://pubmed.ncbi.nlm.nih.gov/35606573/).