

**Impact of lung ultrasonography to assess increasing pulmonary blood flow of ventricular septal defect.**

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**Introduction:** The lung ultrasonography (LUS) has been recently introduced as a novel diagnostic tool to assess pulmonary congestion. Especially B-lines, ultrasound lung comets, consistent with classical Kerley's B line, suggest excess extravascular lung water. However, there has been few reports of LUS regarding congenital heart disease with left-to-right shunt. We evaluated whether B-lines could result from increasing pulmonary blood flow or not.

**Subjects and Methods:** We investigated six patients with ventricular septal defect (VSD group) (mean age; 1.2 years, mean Qp/Qs ratio; 2.1) and 11 aged matched control with no cardiac abnormality (control group). LUS was performed with sector transducers of EPIQ (Philips) and Vivid 7 (GE). Each thorax was divided into three areas and LUS finding were recorded on 6 regions. B predominance is defined as more than three positive B-lines. The number of B predominance areas and the presence of bilateral lung B predominance were examined in each group.

**Results:** The number of B predominance areas was significantly larger in VSD group than in control group ( 4.0 +/- 1.4 vs 0.5 +/- 0.8, p=0.001), and bilateral lung B predominance was significantly higher in VSD than in control group (83% vs 18% p=0.03). However, In VSD group , cardiac catheterization revealed that there was no elevation of pulmonary capillary wedge pressure( 8.8 +/- 1.5mmHg).

**Conclusions:** Our study suggested that bilateral lung B-lines may be induced not only by pulmonary venous congestion but high pulmonary blood flow. LUS may be helpful to find patients with high pulmonary blood flow due to VSD.