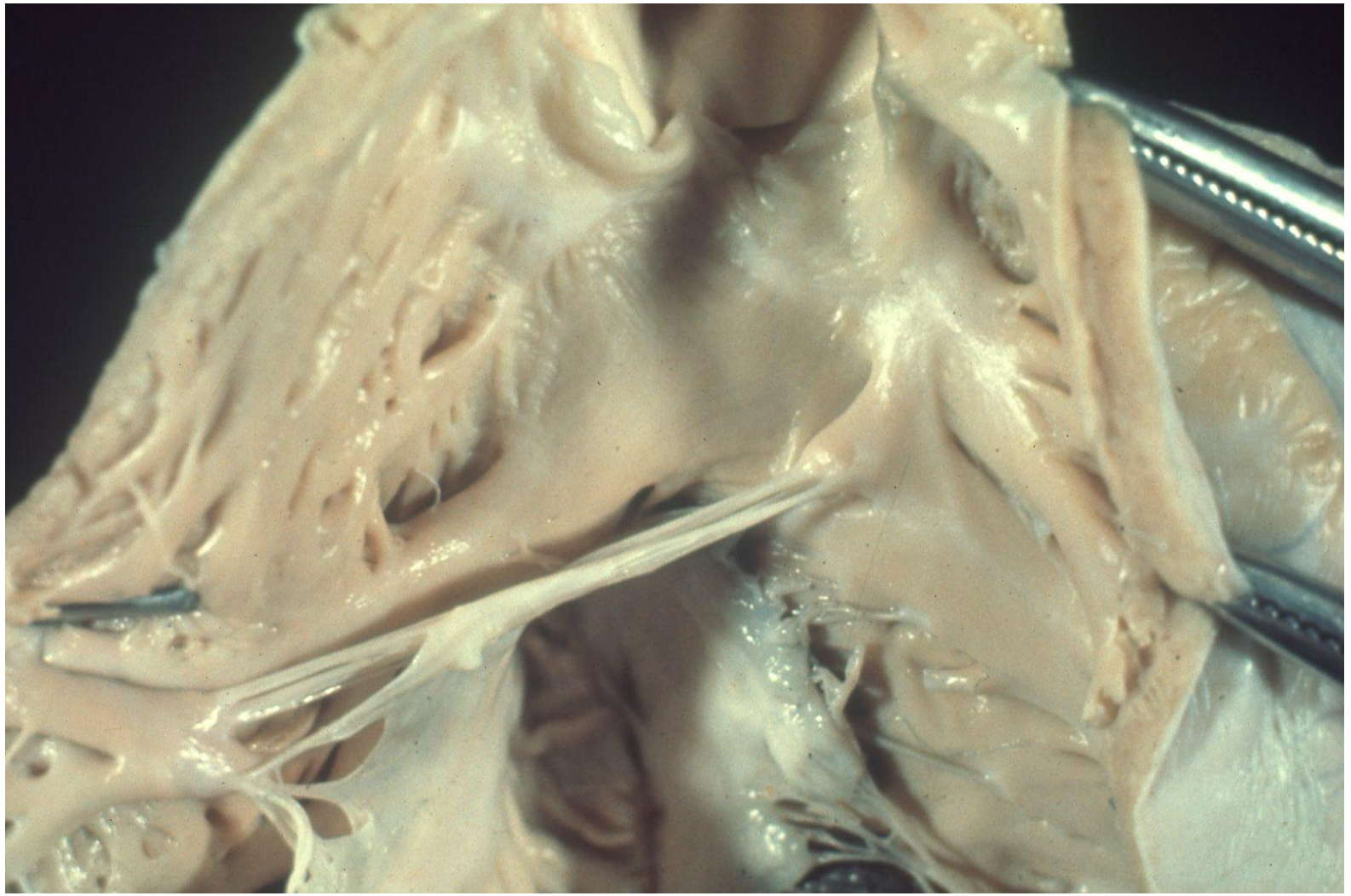
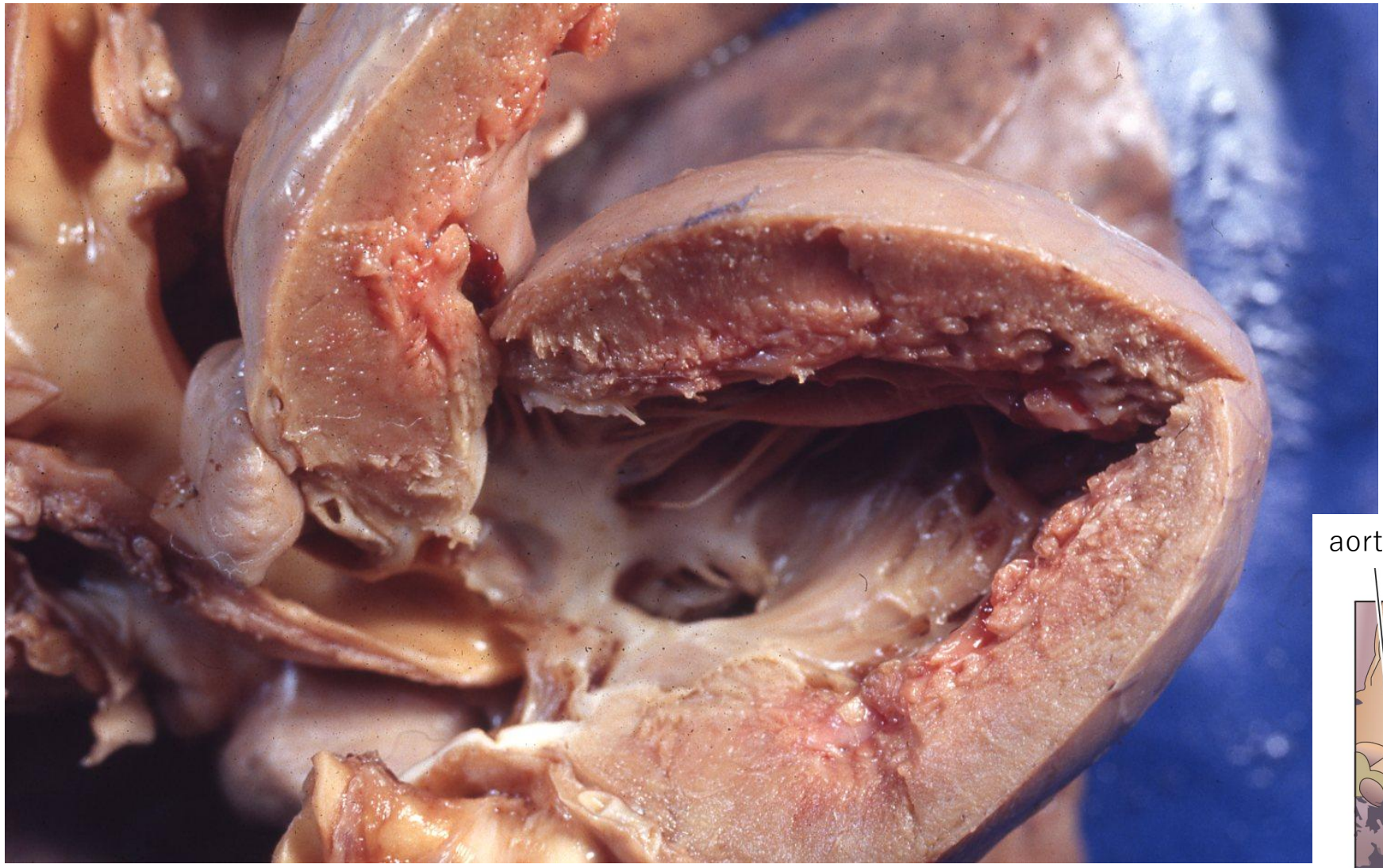
Gross appearance of congenital heart defects

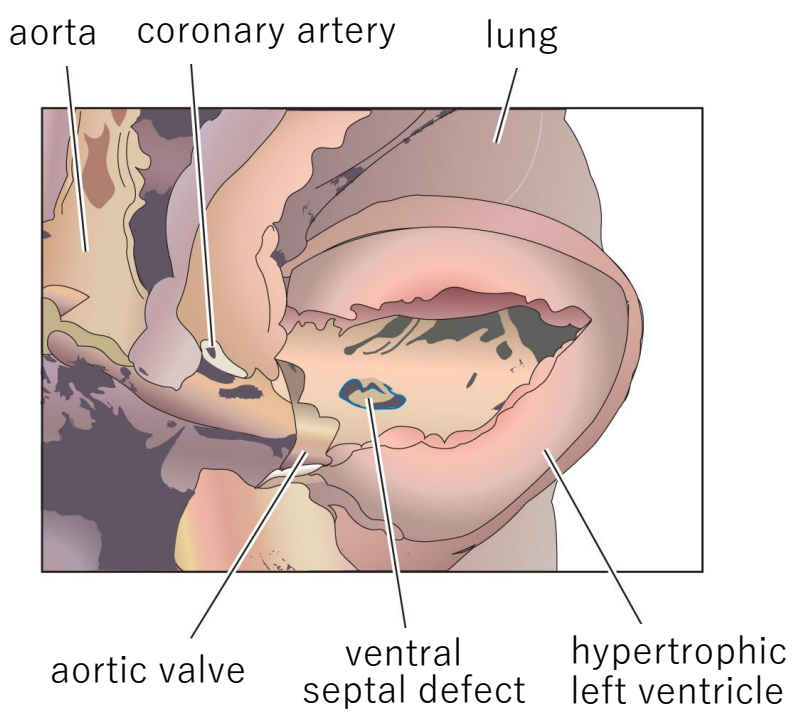
Congenital heart defects (congenital heart anomalies) represernt congenital cardiovascular malformation defecting in the structure of the heart or great vessels present at birth. The defects may involve the interior walls of the heart, the heart valves, and/or the large blood vessels. They are divided into 2 classes: cyanotic heart defects and non-cyanotic heart defects. The risk factors include rubella infection during pregnancy, alcohol, tobacco, parents being closely related, poor nutritional status, taking antidepressant during pregnancy or obesity in the mother.

Ref.: Yasuhara J, Garg V. Genetics of congenital heart disease: a narrative review of recent advances and clinical implications. Transl Pediatr 2021; 10(9): 2366-2386. doi: 10.21037/tp-21-297

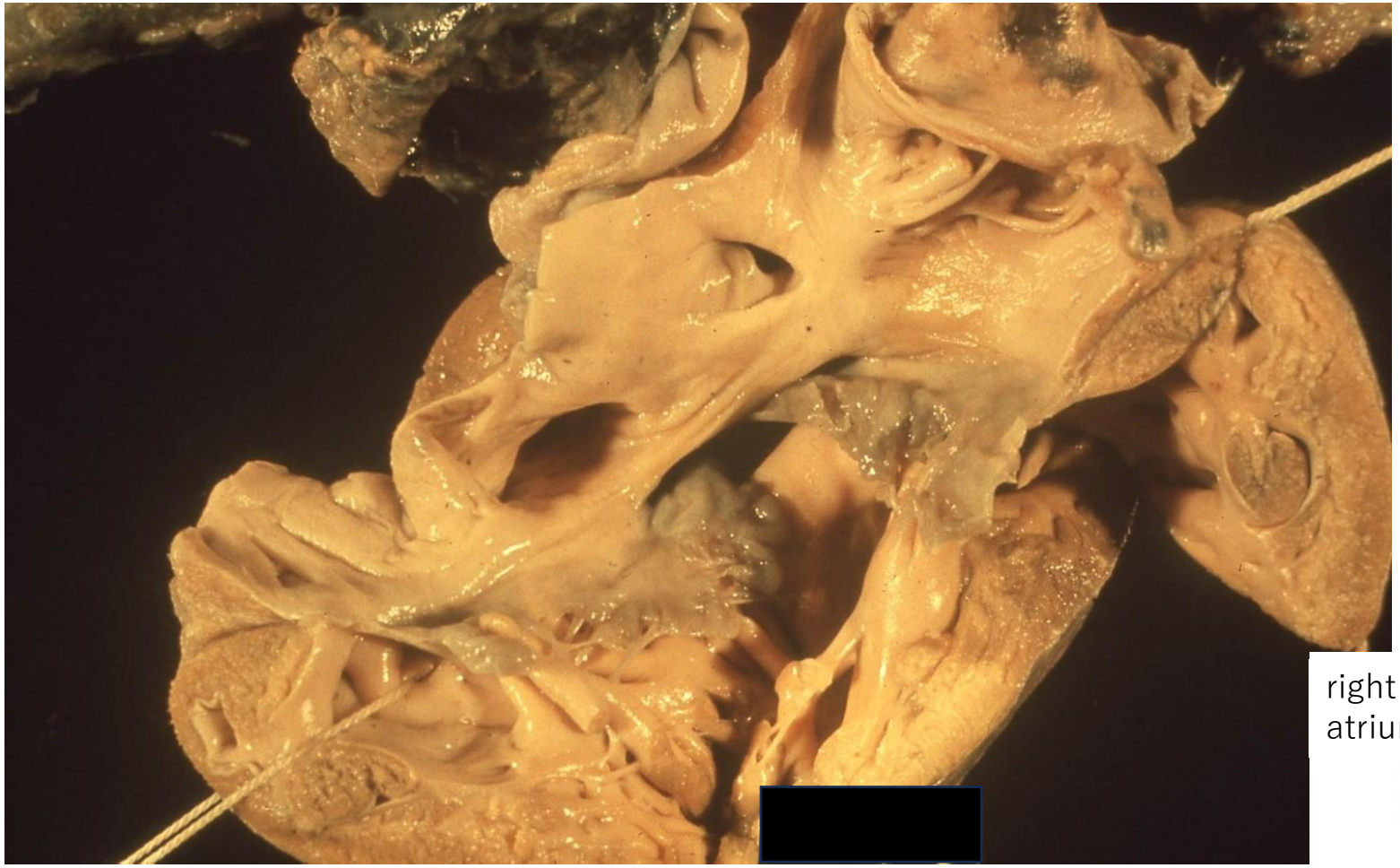


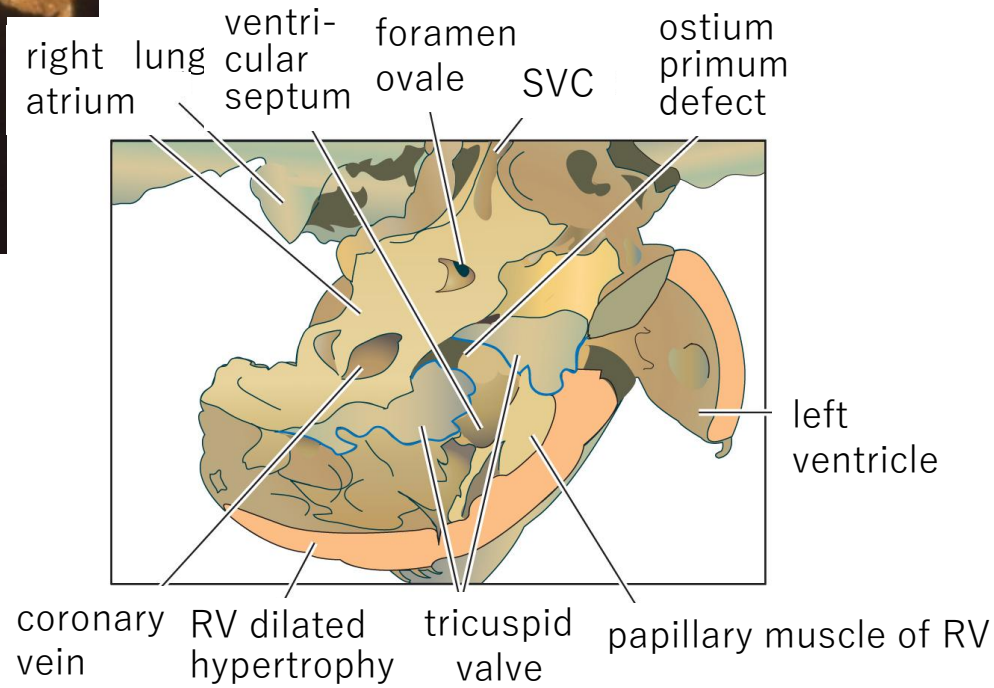
Normal right ventricle. The presence of “crista supraventricularis” characterizes the right ventricle of the heart. The muscular ridge is located between the tricuspid and pulmonic valves. In the left ventricle, no muscle component is seen between the mitral valves and aortic valves.



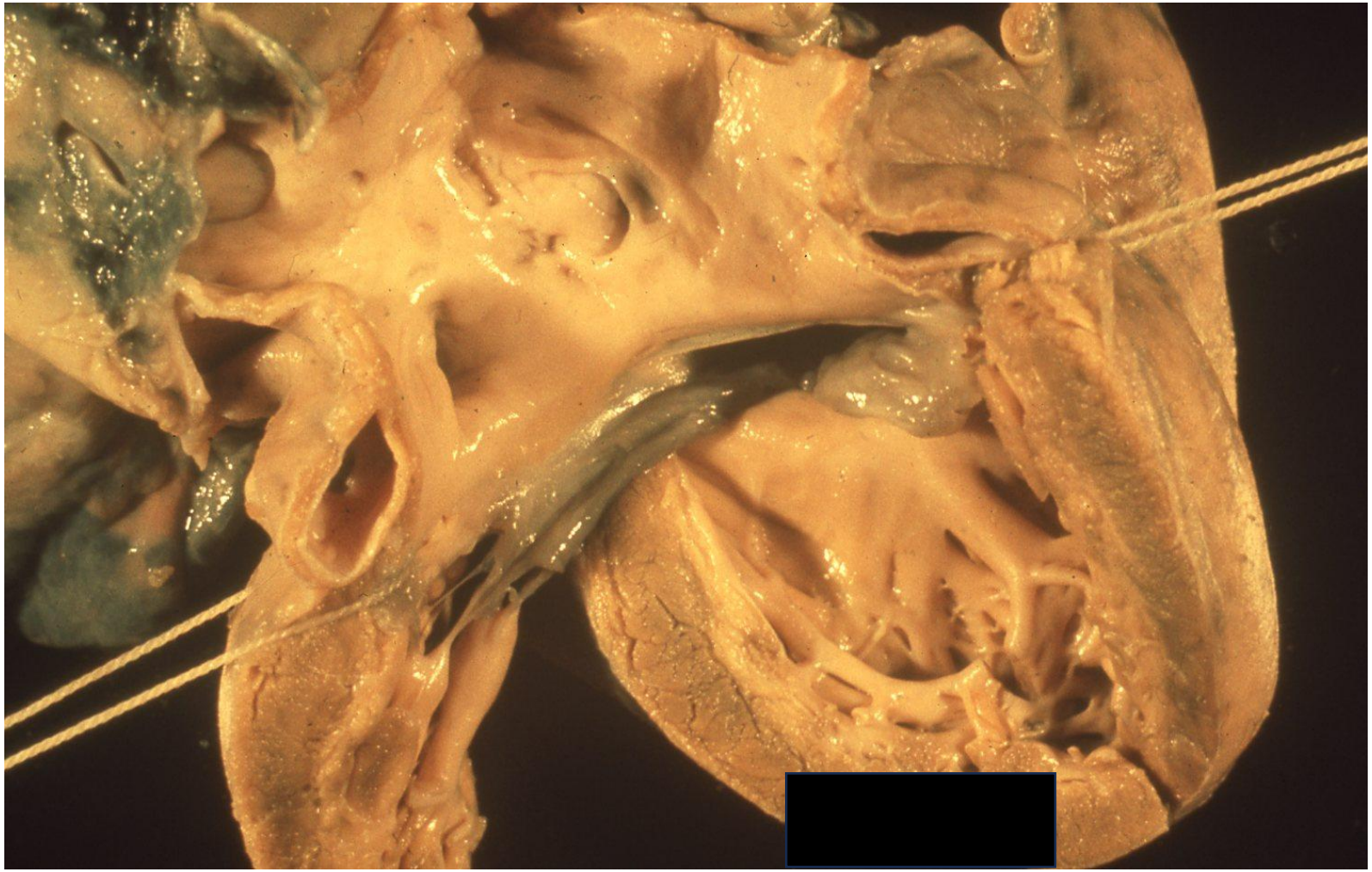


Ventral septal defect seen in a 5-month-old boy. A large effect is present in the muscular septum. In this case, right ventricular hypoplasia is associated.

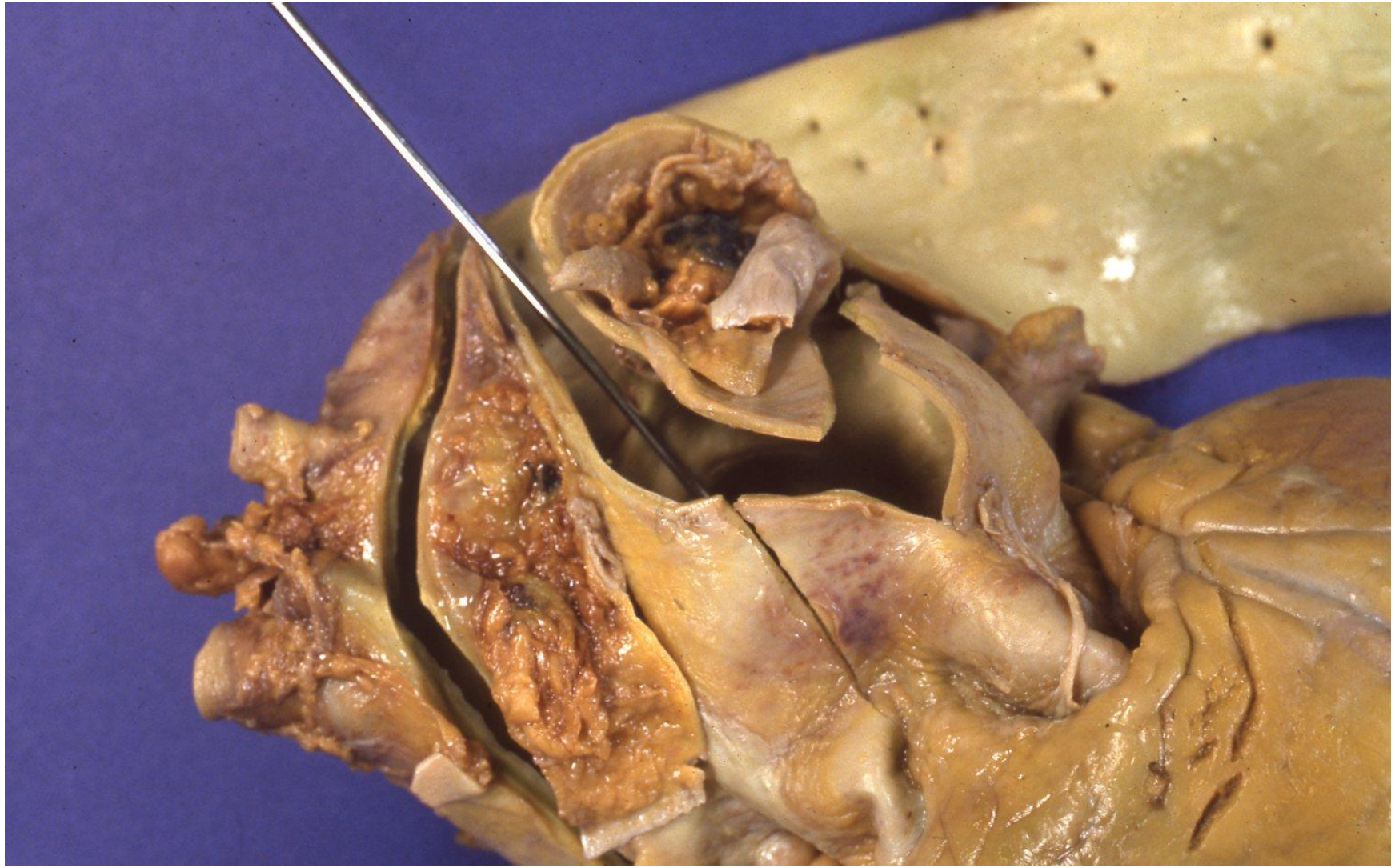




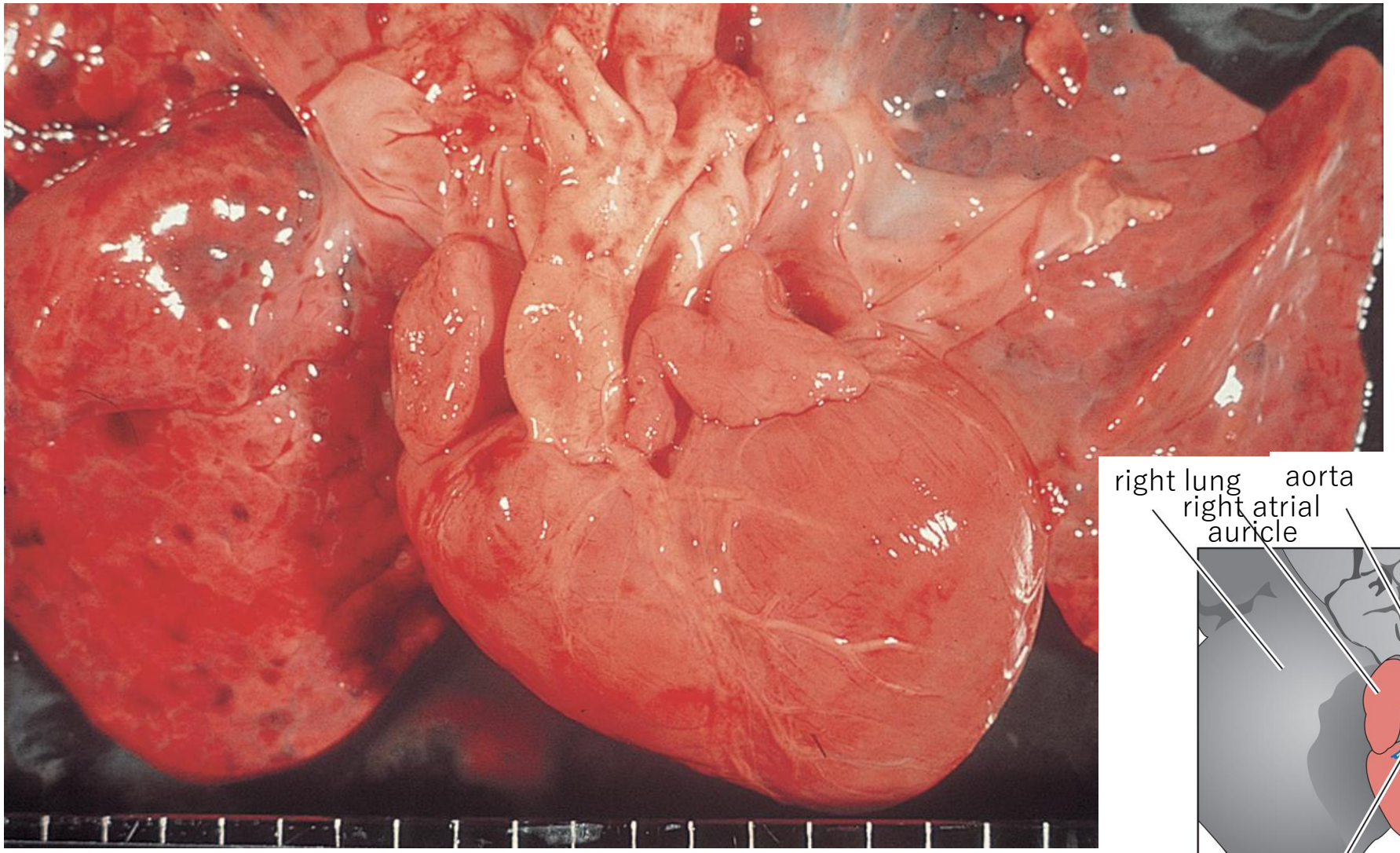
Endocardial cushion defect (complete atrioventricular canal defect) represents a deficiency of the atrioventricular septum of the heart. The defect seen in a 6-month-old boy is viewed from the right ventricular side. In addition to ostium primum defect, abnormalities of the mitral and tricuspid valves are associated. The tricuspid valves are separated and continuous to the mitral valves.

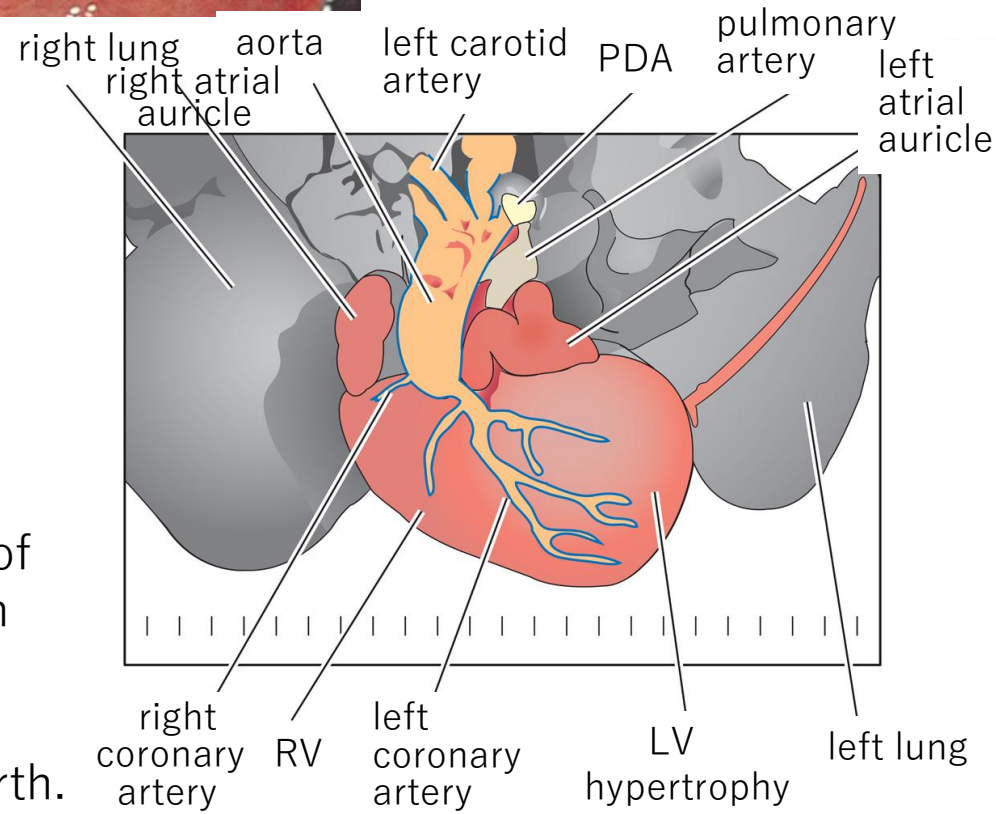


Endocardial cushion defect (complete atrioventricular canal defect) viewed from the left ventricular side. The mitral valves are separated and continuous to the tricuspid valves. A 6-month-old boy case.

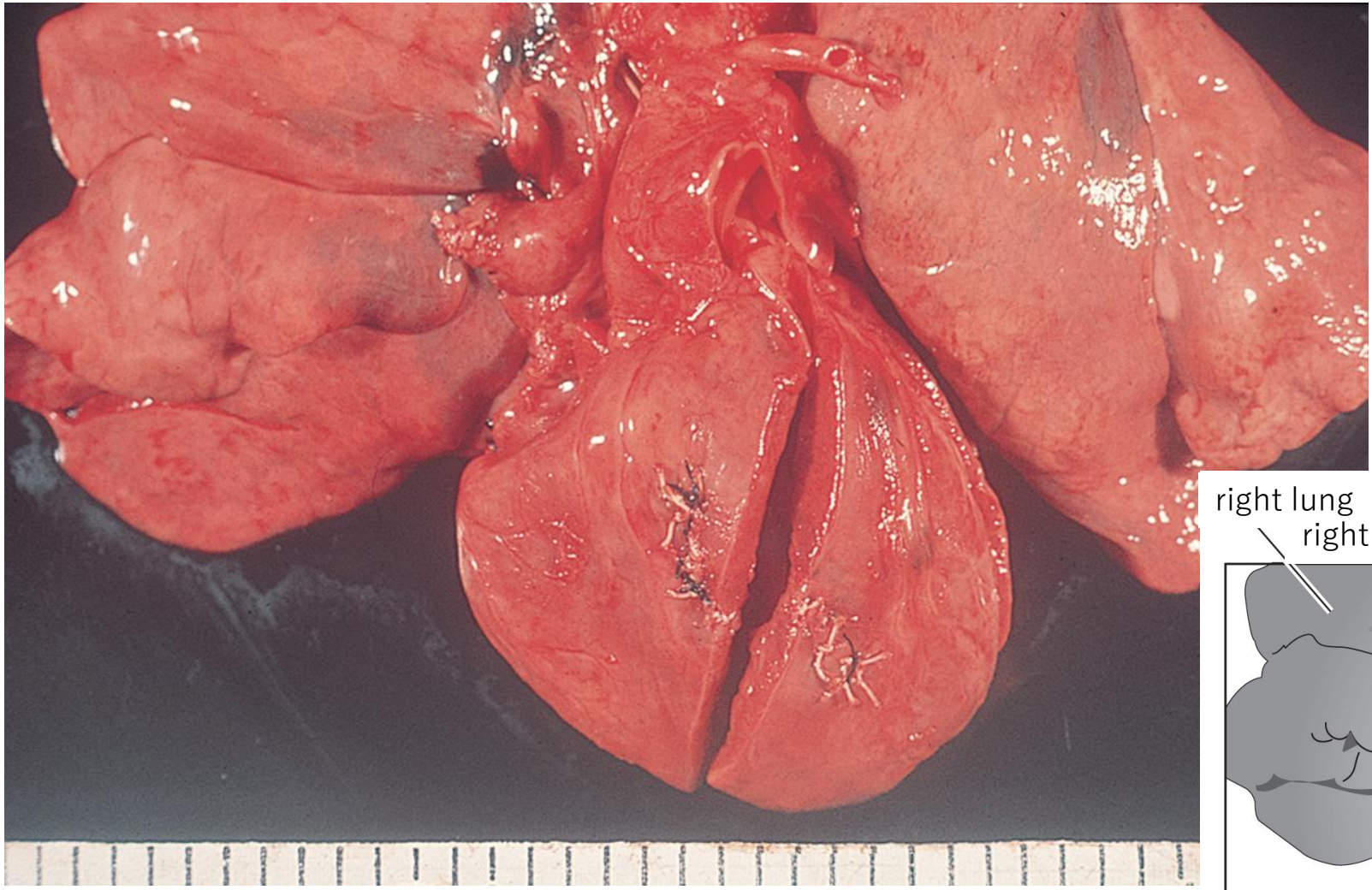


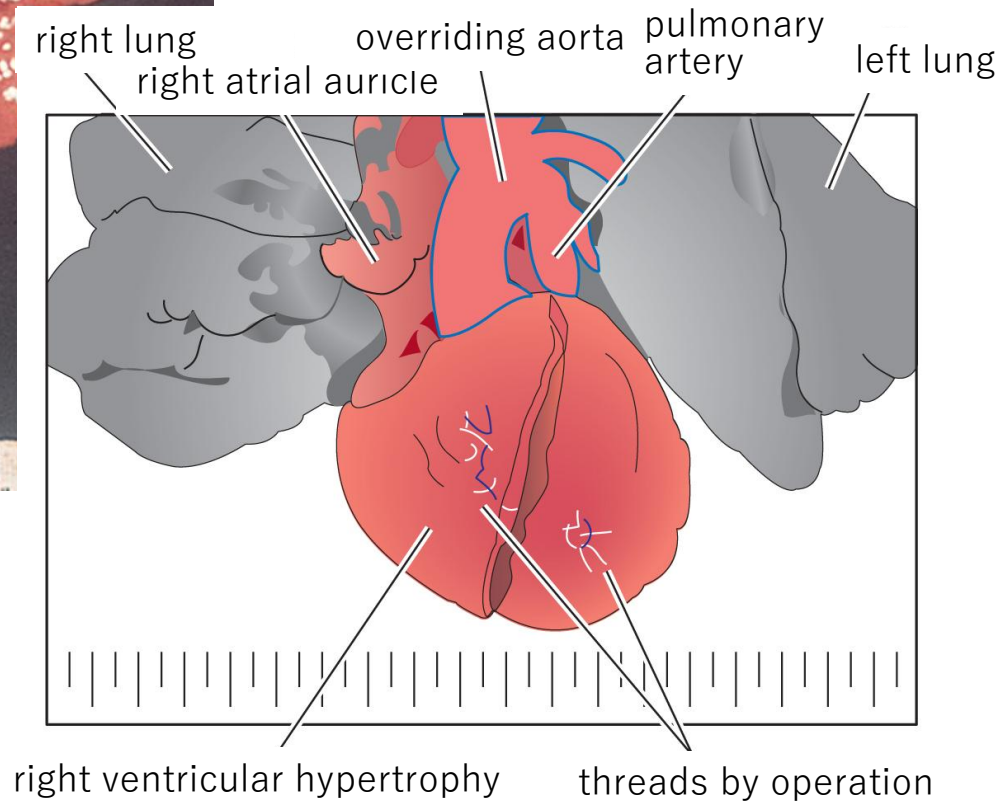
Patent ductus arteriosus (a probe inserted) allows a portion of oxygenated blood from the left heart to flow back to the lungs through the aorta, resulting in pulmonary hypertension followed by right-sided heart failure.



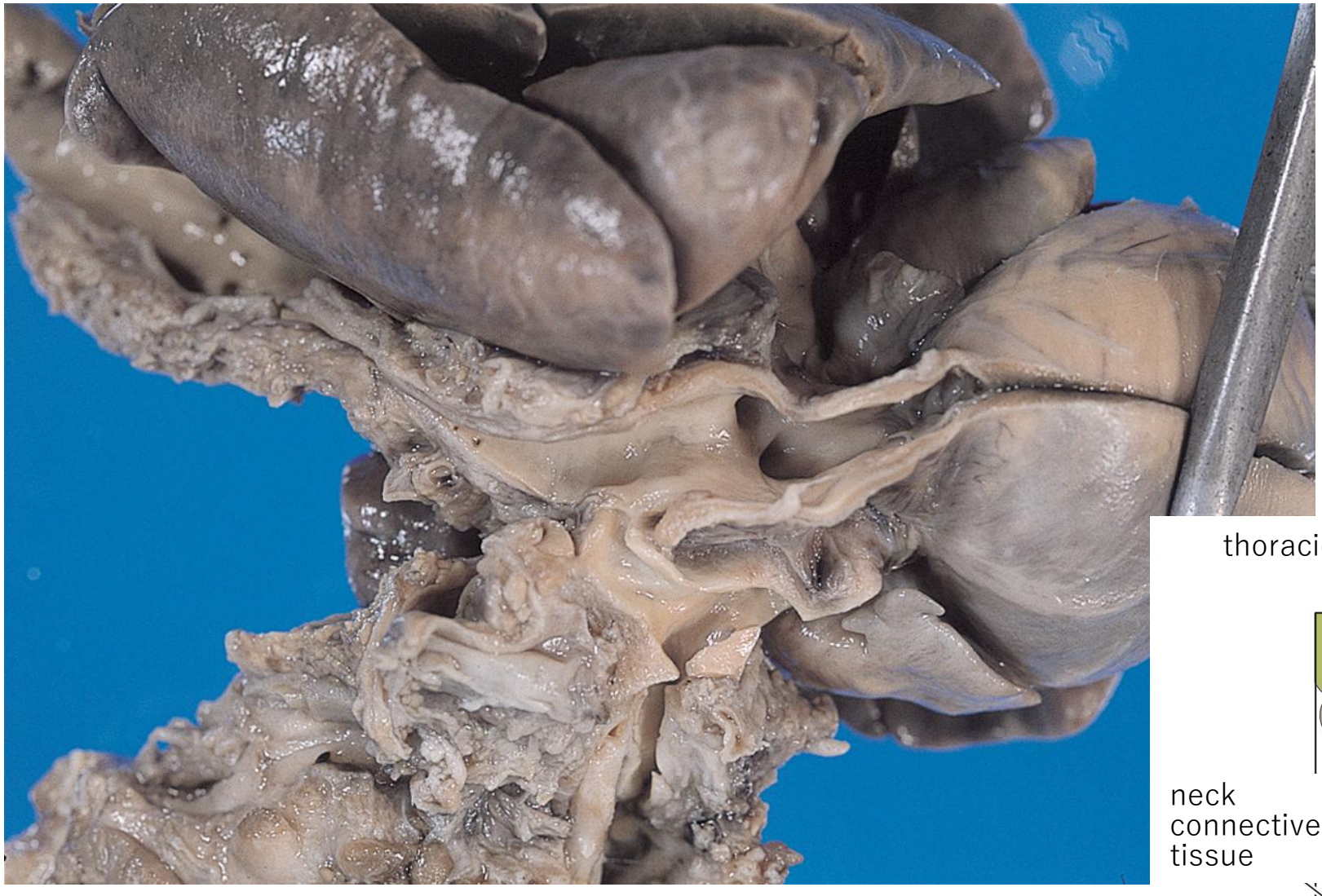


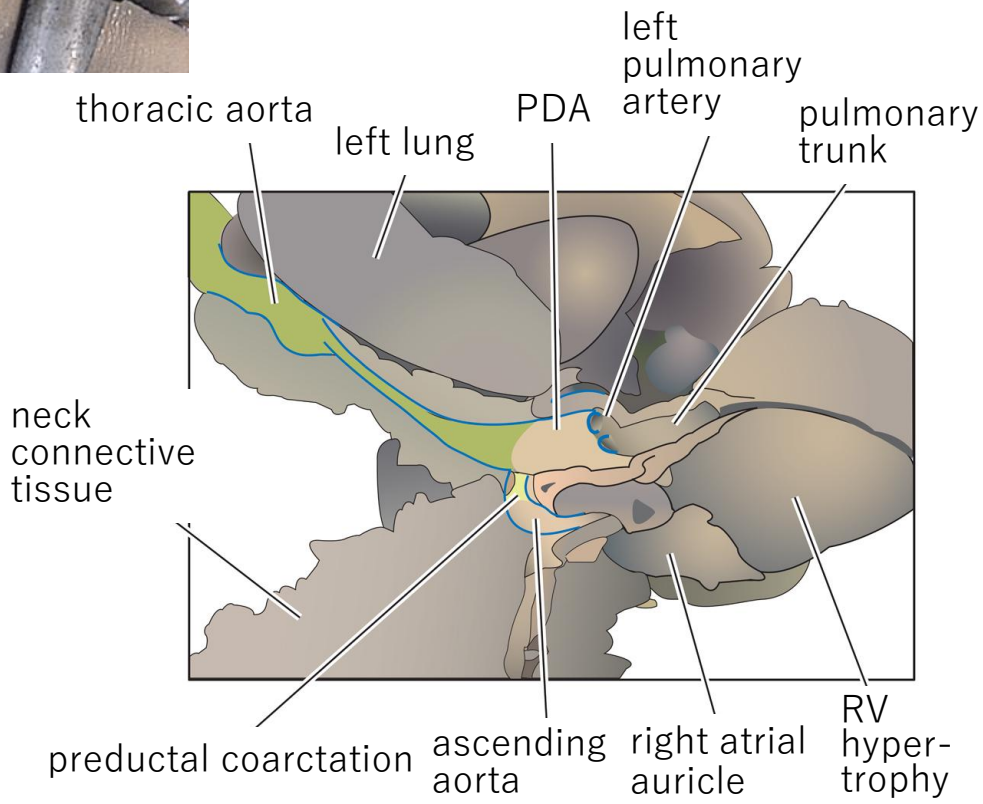
Complete transposition of the great arteries (dextro-transposition of the great arteries) is a cyanotic heart defect. The aorta arises from the right ventricle and the pulmonary artery arises from the left ventricle. The association of ventricular septal defect and patent ductus arteriosus allowed the girl to survive until 5 months after birth.



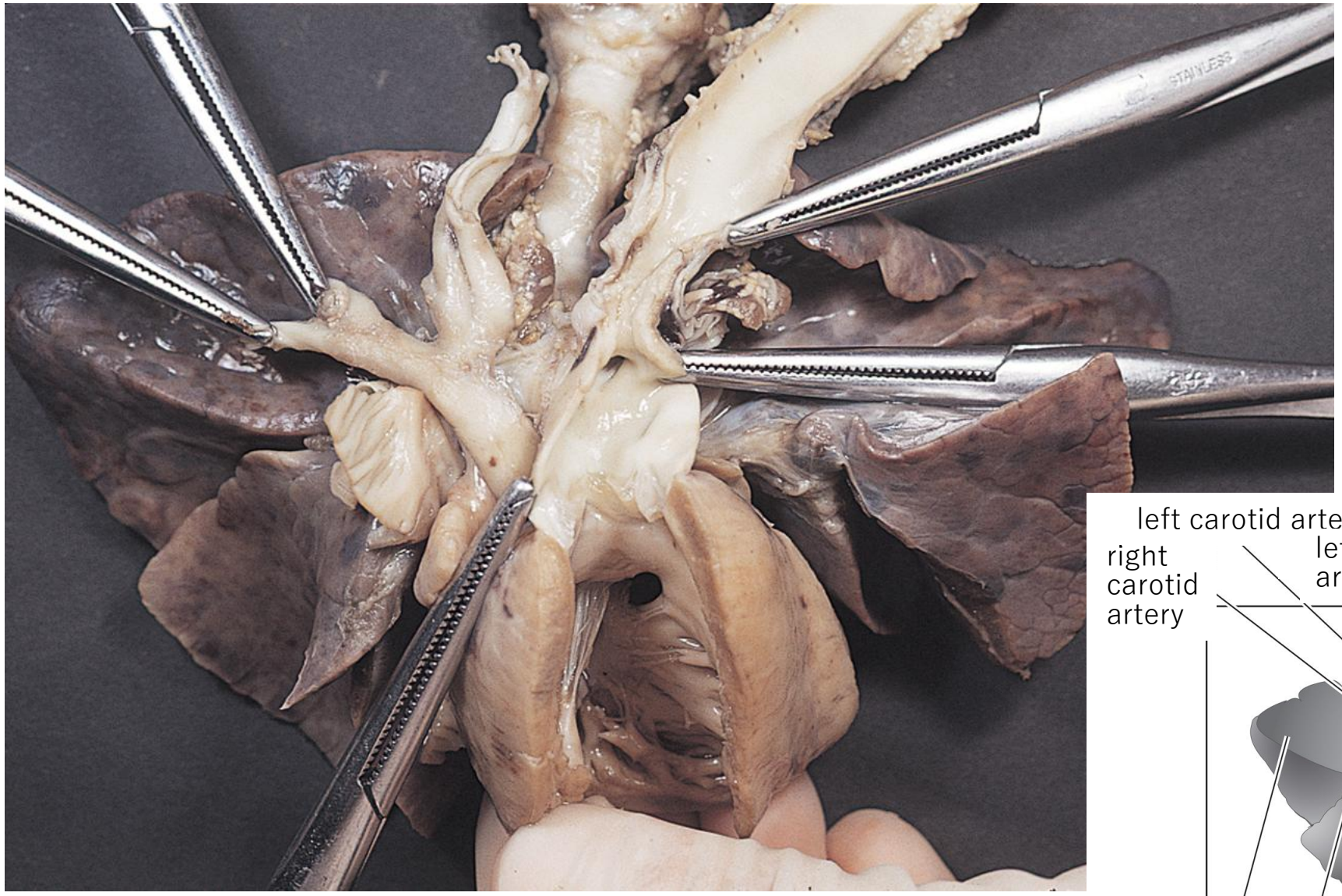


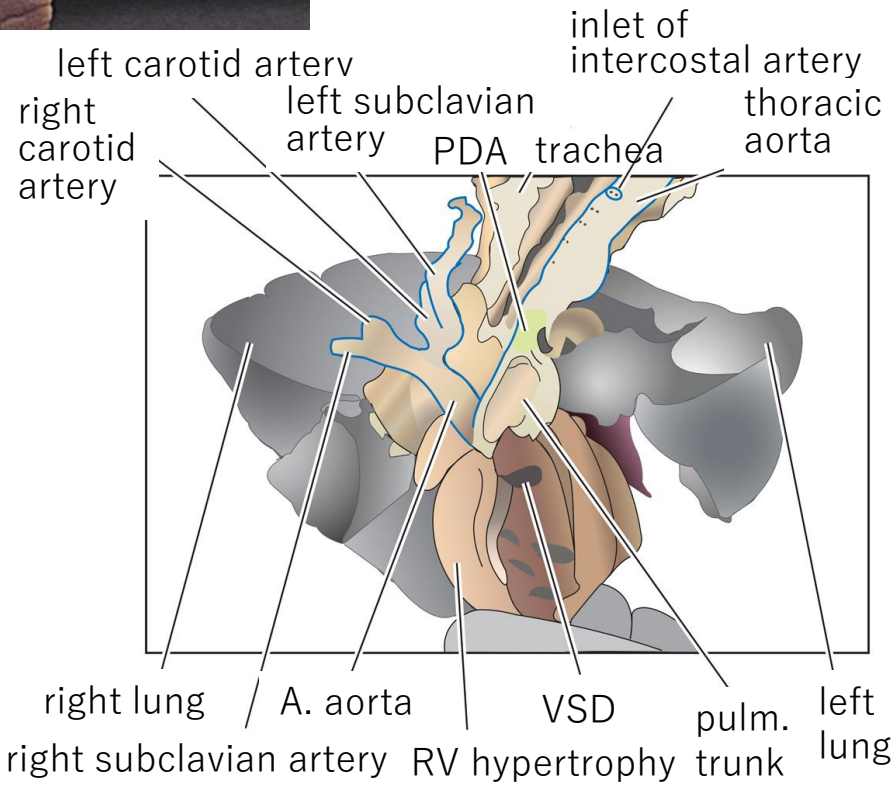
Tetralogy of Fallot is a cyanotic congenital heart defect characterized by four specific cardiac defects: 1) pulmonary stenosis, 2) ventricular septal defect, 3) right ventricular hypertrophy, and 4) overriding aorta. A 6-month-old boy case.



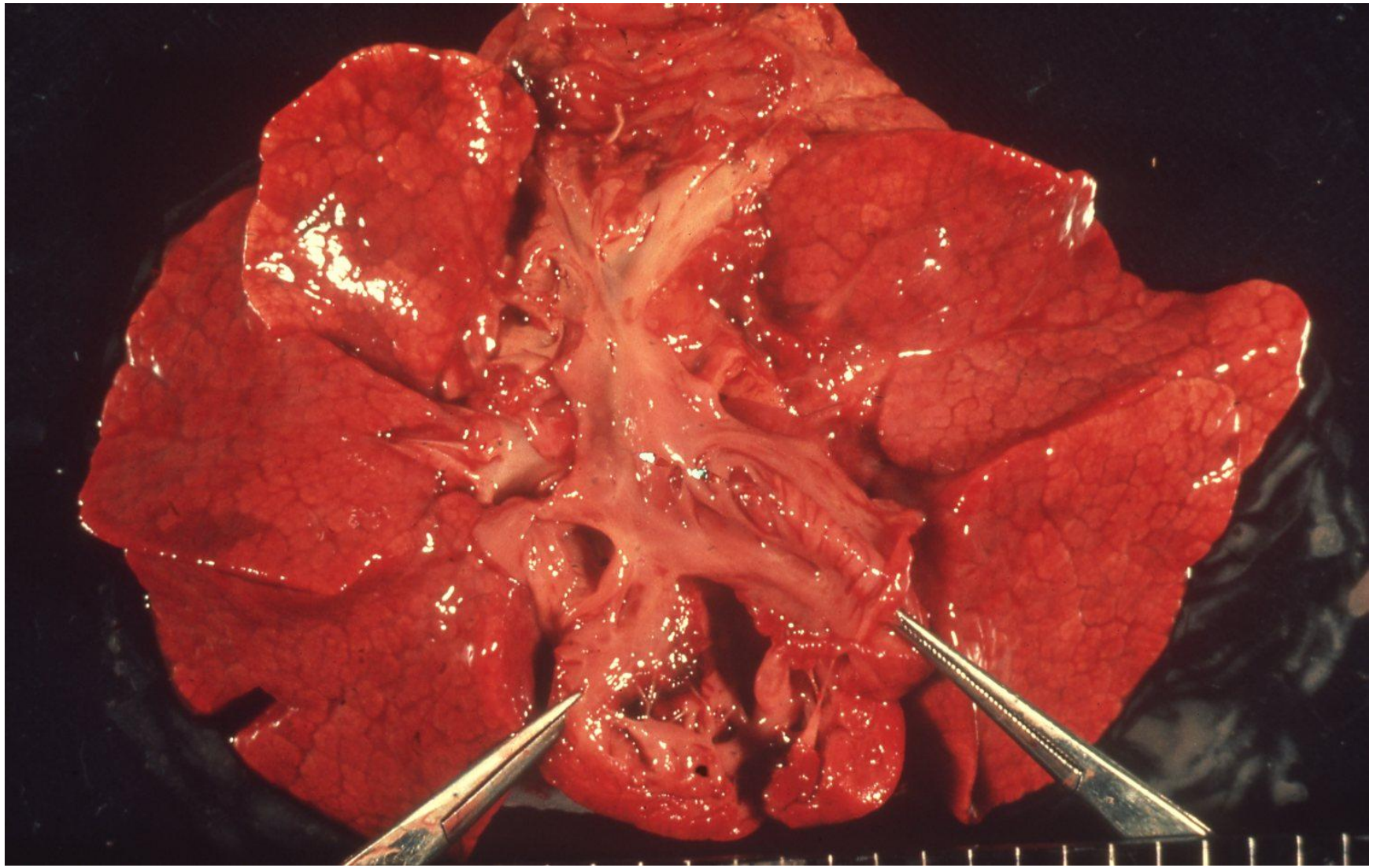


Coarctation of aorta shows aortic narrowing in the area where the ductus arteriosus inserts. In the preductal coarctation type, the narrowing is proximal to the ductus arteriosus. A 2-day-old female infant.





In interrupted aortic arch, the aorta is not completely developed. There is a gap between the ascending and descending thoracic aorta. This is a complete form of coarctation of the aorta. A 7-day-old boy case



Total anomalous pulmonary venous connection (total anomalous pulmonary venous return), is a cyanotic congenital heart defect. All four pulmonary veins make anomalous connections to the superior vena cava (supracardiac type). A right-to-left shunt such as a patent foramen ovale, patent ductus arteriosus or an atrial septal defect must be present.