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**Dissection of ductus arteriosus as a cause of sudden intrauterine death.**

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Background. Sudden intrauterine death is a socio- epidemiological problem. In fact it accounts for 4-5/1000 births.

The causes of unexpected death were mostly in the setting of placenta injury in terms of placenta insufficiency, maternal malperfusion vascularization, fetal inadequate vascularization or umbilical cord causes, such as nodal cord, rupture, marginal insertion, etc. Most of the series in the literature showed the high percentage of cases with unexplained causes ("sine materia") ranging from 20% to 50%.

Premature closure of ductus arteriosus or fossa ovalis are rare conditions for cardiac sudden death .

Methods. We report two cases of sudden intra-uterine deaths due to premature closure of ductus arteriosus caused by dissection of the ductus with hematoma of the parietal wall and ab-extrinsic compression of the lumen. In both cases the pregnancy was physiological without maternal or fetal pathology , no administration of drugs during pregnancy was done. Time of stillbirth was 32 gestation weeks for both cases. We performed TUNEL analysis for apoptosis quantification and immunohistochemistry for MIB1 for scoring proliferation.

Results. The dissecting features showed hematoma of ductus arteriosus extending to the aortic arch and descending aorta and with involvement of carotid and subclavian artery. TUNEL analysis showed a high nuclear apoptosis of smooth muscle cells and absence of intimal MIB1 smooth muscle cell proliferation.

Conclusions: Dissecting aneurism of ductus arteriosus is a rare cause of stillbirth; the pathological marker is hematoma of adventitia that involves aortic arch, brachiocephalic vessels, descending aorta. The evidence of a high rate of apoptosis in the parietal wall of the ductus suggests a possible pathophysiological mechanism with an imbalance between apoptosis and proliferation of smooth muscle cells.