

Unexpected morphologies hamper surgical dissection and ligation of persistent ductus arteriosus in dog

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Introduction: Although minimally invasive occlusion of persistent ductus arteriosus (PDA) has become the mainstream approach, circumferential ductal ligatures remain the preferred treatment option in very small patients and with extremely large PDAs. However, it appears that not all PDA morphologies are amenable to surgical ligation.

Materials and Methods: Intra-operative images and/or necropsy findings of dogs with a PDA with unusual morphologies were retrospectively reviewed.

Results: In 2 dogs, the PDA was nothing more than a waist between the aorta and the main pulmonary artery whereas 3 cases of intramural PDA were observed. In the latter, a crease between the ductal-aortic segment and the main pulmonary artery was visible caudally. However, cranially, a plane of dissection could not be established between aorta, cranial border of the PDA and main pulmonary artery because the ductus ran completely within the wall of the aorta.

Discussion/Conclusion: Ductal morphology can have serious implications during surgical dissection and/or ligation of a PDA. In some dogs, the DA hardly separates from the pulmonary artery in its central zone before it joins the aorta whereas in others there is no region at all in which the DA is separated from the adjacent vessels and the entire ductus (and not only a segment) courses within the wall of the aorta. Certain PDA morphologies preclude surgical dissection and/or subsequent double ligation of the PDA. Surgeons should realize that such unusual cases do exist and interrupt the surgery whenever the suspicion is high.