Morphometric gross characterization of the heart of healthy and diseased pigs of different ages

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BACKGROUND

Many authors tackled HW/BW and (LV+S)/RV ratios in order to predict cardiac abnormalities, but neither got to a consensus of which is the normality of these parameters, nevertheless how it changes among pig's life.

OBJECTIVES

The primary aim of this final degree thesis was to **establish normal HW/BW and (LV+S)/RV ratios in healthy pigs of different age ranges**. As a second objective, same parameters were calculated in a limited set of sick animals with different diagnosed pathologies and compared to the normal ones set in the first aim.

MATERIALS AND METHODS

267 animals were used for this study. After a post-mortem inspection, they were categorized as healthy and non-healthy. They were classified in 4 age groups in healthy animals, and 3 age groups in non-healthy animals.
The heart was opened following the method indicated in the Jubb, Kennedy and Palmer's book (2007):

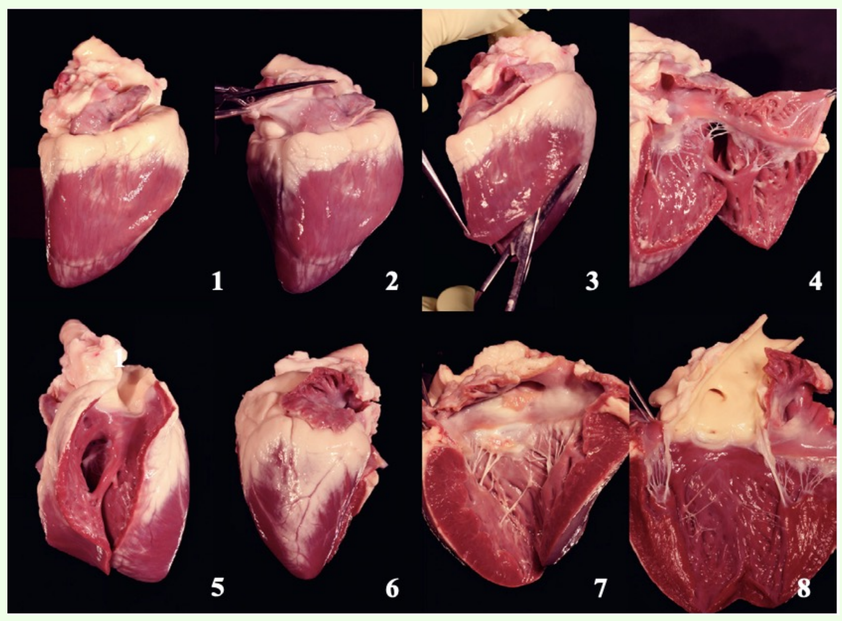


Fig 1. Steps to open the heart (Robinson & Robinson, 2016)

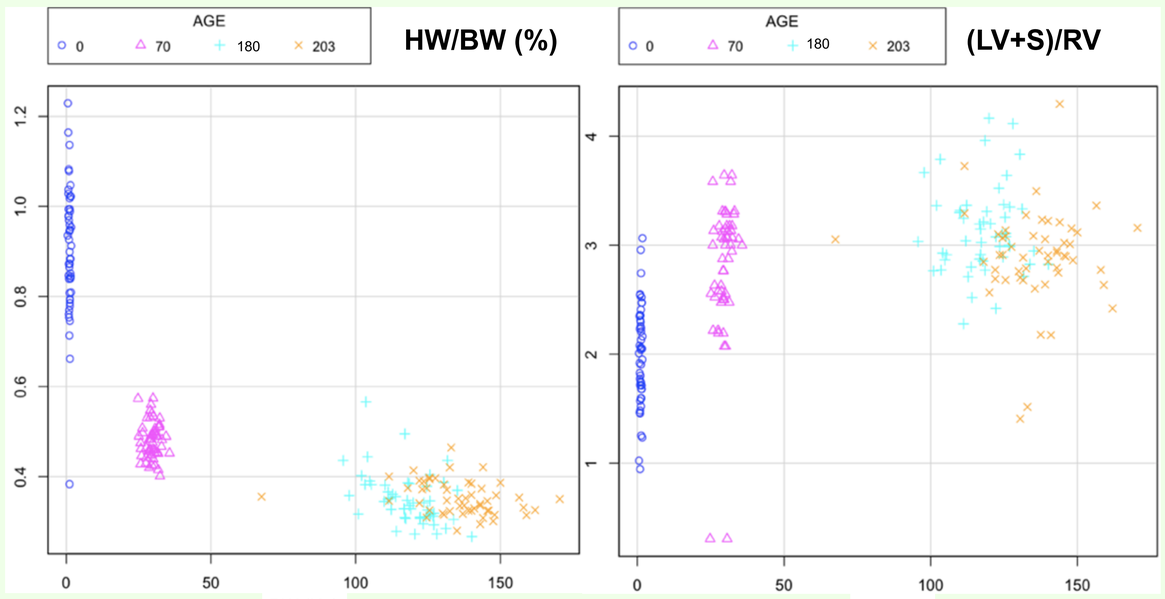
HEALTHY ANIMALS

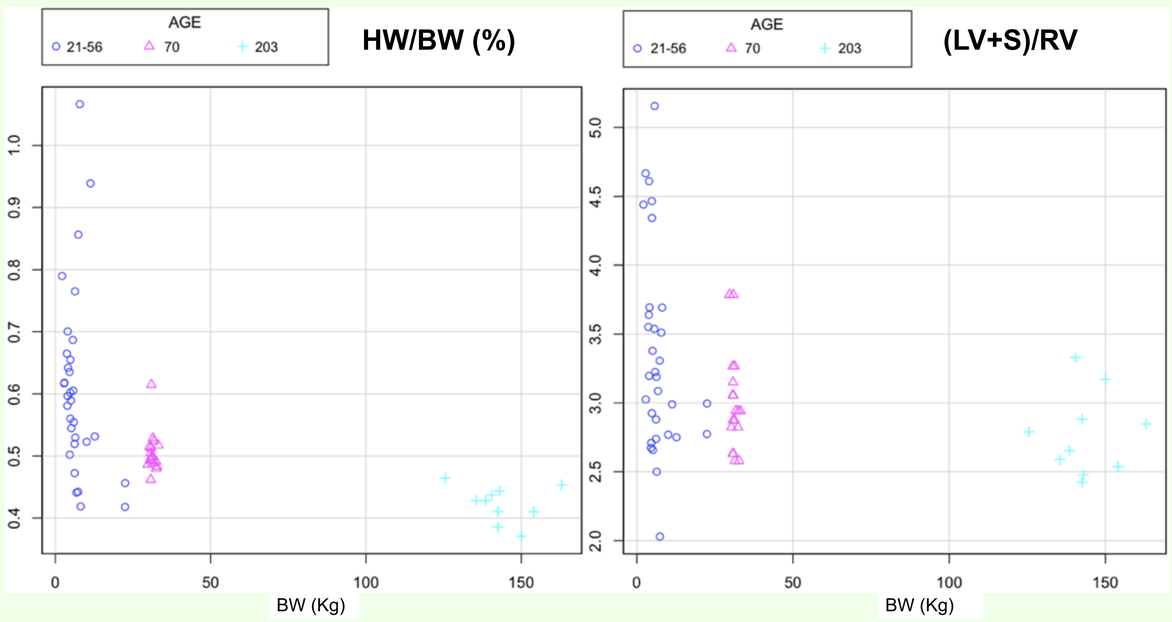
AGE (days)	0	70	180	203
n	50	54	51	52
HW/BW (%)	0.90[a]	0.48[b]	0.35[c]	0.36[c]
(LV+S)/RV	1.98[a]	2.80[b]	3.13[c]	2.87[b,c]

NON-HEALTHY ANIMALS

AGE (days)	21-56	70	203
n	21	18	10
HW/BW (%)	0.61[a]	0.51[b]	0.42[b]
(LV+S)/RV	3.35[a]	3.00[a,b]	2.77[b]

* *Different superscripts in the same row mean significant differences ($p<0.05$).*





CONCLUSIONS

- The present study set the normality values for HW/BW and (LV+S)/RV ratios among pigs of different ages, indicating a decreasing and increasing trends, respectively, over the animal life
- HW/BW or (LV+S)/RV ratios did not allow discriminating a particular pathology (including cardiac pathology) in this study, but diseased animals tended to have higher HW/BW and lower (LV+S)/RV values compared to healthy pigs