Objectives: Fetal weight estimation may have 10% of standard error and this may be relevant in clinical decisions. We aimed to introduce a new variable to increase the prediction of fetal weight.

Methods: retrospective analysis of images. Cases with column 3D acquisitions were included. 5 lumbar vertebrae were measured longitudinally in 3D skeleton mode. Gain and position was corrected, and the measurement was done on the sagittal plane of the 2D image, or in the 3D image itself. Other standard biometric parameters were included in a multivariate regression to estimate birthweight. Only cases with less than 7 days to delivery were selected.

Results: In 58 LCL measured, mean column length was 55mm (50-59). 47 fetuses had less than 7 day interval between delivery. LCL was correlated to birth length (p<0.05 R=0.326) and birthweight (p<0.05 R=0.361). Instead, femur did not correlate to birth length (R=-0.01 P= 0.89) nor birthweight (P=0.9 R=0.003). Multivariate analysis only demonstrated a independent correlation between HC and birthweight, but not for LCL, Femur and AC.

Conclusions: In this simple pilot study, the LCL was better correlated than the femur to birth weight and length. A larger trial may demonstrate if it should be included in standard fetal weight formulas.