Objective: Low-lying placenta (LLP) are regarded as high-risk conditions of pregnancy. LLP is defined as <2cm margin from edge to internal os, and often cesarean delivery are selected. However, ultrasound findings in LLP, including lower uterine segment extension for placental migration remain unclear. In this study, we searched clinical characteristics and signs in ultrasound to predict complications in delivery of LLP.

Method: We retrospectively reviewed the cases of LLP for the past 5 years from medical records (2013-2017). Aloka F37 or Siemens Sonovista C3000 with 7.5MHz transvaginal probe were used for routine medical check-up in every 2 weeks after 24 weeks GA. Location of placenta, cervical length and spongeous (S-) findings suggest venous plexus were defined. Mode of delivery, blood loss and placental weight were also searched. Statistical analysis was performed using the Mann–Whitney U test (SPSS Statistics v25, IBM Japan Inc.).

Result: In our cases, 33 LLP were located on posterior wall attachment and only one was on anterior. This anterior-located LLP with S-finding caused to massive bleeding which massive blood transfusion and 3 times UAE were needed. In contrast, only one case in 33 posterior cases needed transfusion. Average cervical length at diagnosis was significantly longer in the group with S-finding (n=13, 40.2 mm) compared to no S-finding group (n=21, 32.7 mm, p=0.01). Caesarean section was performed in all cases with S-findings. Vaginal delivery was performed in 5 cases in the other group. There was no difference in the amount of blood loss, infant birth weight or placental weight.

Conclusion: Surprisingly, almost all LLP located on posterior wall; anterior-located low-lying placenta showed miserable outcome on delivery. S-finding correlated with cervical length, suggesting that failed uterine lower segment extension contribute to placenta migration can be predicted from this ultrasound finding.