Objective: To investigate the value of 3D Crystal Vue in the diagnosis of abnormally invasive placenta (AIP)

Methods: Prenatal ultrasound was used to diagnose 27 cases AIP. In all cases, the pregnant woman filled the bladder, observed characteristics of the placenta. The 3D was scanned to obtain the volumetric image of the sagittal section of the uterus and the bladder, and 3D crystal Vue was applied for image processing. The "Track sign" of the normal uterine muscle wall parallel to the bladder wall, if interrupted, suggesting that the placental adhesion or accrete. Combined with signs of AIP, preoperative evaluation of the degree of AIP and amount of bleeding were performed and matched with intraoperative findings and postoperative pathology.

RESULTS: 24 cases were confirmed by intraoperative or postoperative pathology, 3 cases were lost to follow-up. All cases of placenta were extensive, except 4 cases. Among them, 17 cases for 1 CS, 5 cases for 2 CS or more, 2 cases had no history of CS. 4 cases had a history of AIP. All the cases did not undergo hysterectomy, except 2 cases. 15 cases, Track sign was discontinuous with or without signs of AIP, bleeding 300-1000ml, confirmed as placental adhesion or accrete, 9 cases were accompanied with several signs of AIP, 1500-5000ml, the pathological diagnosis was placental penetration, one was cervical placenta accrete, one was uterine rupture. 24 cases were completely consistent with the preoperative evaluation.

Conclusion: The study shows that "Track sign" of 3D Crystal Vue was combined signs of AIP can assess degree of AIP and amount of bleeding accurately, due to Crystal Vue allows easier differentiation between tissues with different echogenicity by enhancing contrast. 3D Crystal Vue provides imaging evidence for personalized treatment options for AIP high-risk pregnant women.