**Title:** The Value of Radiant Flow and 3D HD Power Doppler Flow Ultrasound in Detection of Vellamentous Insertion of Umbilical Cord.

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**Objectives:**
To analyse the application of Radiant Color Flow and 3D HD Flow in confirmation of vellamentous insertion of umbilical cord.

**Methods:**
In a two year period we examined 5120 patients and analysed placental insertion and also insertion of umbilical cord. Examinations were performed on GE E10 with transabdominal probe RMC6 and GE E8 with transabdominal probe RAB6. Umbilical cord insertion was checked in color Doppler mode with Radiant flow. When suspicious finding was detected, 3DHD power Doppler flow was applied in order to confirm vellamentous umbilical cord insertion. 3D volume was obtained in power Doppler mode, High2 resolution with sweep angle of 45 degrees. Further analysis was performed in Gloss Body mode with color and monochrome reconstruction of umbilical vessels position.

**Results:**
In the studied period we detected 5 patients with vellamentous insertion of umbilical cord. Vellamentous insertion was detected in two patients with singleton pregnancy in second trimester.

One of them had vasa praevia confirmed with 3D HD flow with vessels overlying internal cervical orifice and isthmic part of the uterus. Placental insertion was on the anterior wall and umbilical cord insertion on posterior wall of the uterus. Three patients had twin pregnancy with septal vellamentous insertion. Patients with vellamentous insertion were delivered by caesarean section and umbilical cord insertion confirmed after extraction of the placenta.

**Conclusion:**
Vellamentous umbilical cord insertion can be screened by Radiant color flow and definite diagnosis can be confirmed in 3DHD power Doppler mode. In order to prevent obstetrical complications pregnancies with vellamentous insertion were terminated by caesarean section.