DISPLACEMENT OF FETAL CENTRAL NERVOUS TISSUE IN INDUCED MEDICAL ABORTION IN THE SECOND TRIMESTER OF PREGNANCY

Markova I.1, Durdova V.2, Kratochvilova T.1, Studnickova M.1, Strasilova P.1, Horvathova K.1, Sopikova B.2, Geierova M.2, Pilka R.1, Lubusky M.1

1Centre of Fetal medicine and Ultrasound diagnosis, Department of Obstetrics and gynecology, Faculty Hospital Olomouc
2Department of Clinical and Molecular Pathology, Faculty Hospital Olomouc

OBJECTIVE
The analysis of two cases of induced medical abortion in the second trimester of pregnancy. In both cases the fetal central nervous tissue was found outside of the cranium and spinal aqueduct on histopathological examination.

MATERIALS AND METHODS
In case 1 (figures 1 and 2), the combined first trimester screening was performed at 13 weeks of gestation with a 1:6 risk for trisomy 21, morphological abnormalities were not present. Consequently chorion villi sampling was performed with a result of trisomy 21 - Down syndrome. The pregnancy was terminated upon request of the patient at 14 weeks of gestation by induced medical abortion. The aborted fetus was of masculine gender, had a weight of 100g, length of 12 cm, without any macroscopic morphological abnormalities.

In case 2 (figure 3), the combined first trimester screening was performed at 13 weeks of gestation, the risk for trisomy 21, 13 and 18 was low. Detailed ultrasound examination showed suspicion of an abdominal cavity defect, an atypical ultrasound scan of the stomach and the value of nuchal translucency was above 95. centile. At 14 weeks of gestation chorion villi sampling was performed. Normal female karyotype was determined.

Ultrasound examination at 17 weeks of gestation ruled out the abdominal cavity defect, the gastrointestinal tract appeared normal. The abnormal position of both lower limbs on ultrasound examination dominated - flexion of the hip joints and hyperextension of the knee joints with bilateral club foot. There were no other abnormalities found. On patient request the pregnancy was terminated at 17 weeks of gestation by induced medical abortion. The aborted fetus was of feminine gender, had a weight of 157g, length of 18 cm, the abnormal position of both lower limbs corresponded with the prenatal ultrasound finding and with the X-ray scan results, no other morphological abnormalities were present.

RESULTS
In case 1, upon histopathological examination, fetal central nervous tissue was found in the abdominal cavity next to liver tissue, conversely most of the central nervous tissue and spinal cord was missing from the cranium and spinal aqueduct.

In case 2, upon histopathological examination, fragmented and bruised spinal cord tissue was found within the entire spinal aqueduct. Fragments of cerebellum and cerebral stem were found in the thoracic part of the spinal aqueduct. These findings did not correspond with neither the ultrasound examination findings prenatally nor with the determined diagnosis. The dislocation of fetal central nervous tissue outside of the cranium and spinal aqueduct appears to be a result of external pressure on the fetus during abortion without disrupting the skin barrier. These findings were therefore evaluated as artefacts.

CONCLUSION
In case 1 primitive neuroectodermal tumor in the fetal abdominal cavity was considered in the differential diagnosis. Case 2 was closed as a neuropathic type of classic arthrogryposis.

The displacement of fetal central nervous tissue outside of the cranium and spinal aqueduct during induced medical abortion after the 12th week of pregnancy is possible but it is not considered a fetal morphological abnormality.