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## ***Caesarean delivery for twin pregnancy: spinal anaesthesia for asymptomatic type 1 Arnold Chiari malformation***

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### **Dear Editor,**

We have presented safe and successful management of single shot spinal anaesthesia for the first time during twin caesarean delivery in a parturient with asymptomatic type 1 Arnold Chiari malformation (ACM) without syringomyelia.

Arnold Chiari malformation is a congenital anomaly associated with herniation of the cerebellar tonsils through the foramen magnum and mostly presented with headache, pain in the neck and upper extremities, ataxia, nystagmus, vertigo and/or upper extremity atrophy and/or syringomyelia [1]. Regarding anesthetic management of parturients with ACM, there are no firm recommendations. Some authors have cautioned that dural puncture for anesthetic management of vaginal or abdominal delivery may initiate and/or exacerbate neurological symptoms while others have documented safe use of regional anaesthesia in these patients [2].

A 32 year-old parturient, gravida 1, para 0, at 37 weeks' gestation (weight: 85 kg, height: 178 cm) parturient with asymptomatic type 1 ACM was admitted. Her cranial magnetic resonance imaging (MRI) showed herniation of both cerebellar tonsils from foramen magnum approximately 6 mm downward. Since neurological examination was unremarkable, neurosurgical intervention was not planned. Platelet count was 189.700/mm<sup>3</sup>. Baseline blood pressure (BP) on arrival in the operating room was 135/75 mmHg. Spinal anaesthesia was performed between L2-3 intervertebral space with a 26-gauge Atraucan spinal needle using 12 mg of hyperbaric bupivacaine, 150 µg of

morphine and 10 µg of fentanyl in the sitting position. The procedure was uneventful with no paresthesia or pain on injection. A healthy twin (female baby of 2440 g and male baby of 2950 g) was delivered. Apgar scores of both newborns at 1 and 5 minutes were 9/10 and 9/10, respectively.

Neuraxial anaesthesia in patients with type 1 ACM with or without syringomyelia has been reported. Type 1 ACM was diagnosed by cranial MRI in a patient underwent caesarean delivery under spinal anaesthesia after post dural puncture headache. However, the patient complained persistent headache even after blood patch [3]. A similar case who had an inadvertent dural puncture during labor analgesia, nystagmus and oscillopsia was observed after two weeks and cranial MRI showed type 1 ACM requiring neurosurgical intervention [4]. Contrary to these cases, our patient's diagnosis of type 1 ACM was known before cesarean delivery. Landau et al [5] reported a case with atrial septal defect, epilepsy and surgically corrected type 1 ACM underwent caesarean delivery with spinal anaesthesia. We have also decided to perform single shot spinal anaesthesia for caesarean delivery of twin pregnancy. In general the overall perinatal mortality rate of twins is sevenfold than that of singletons. Forty percent of twins are often delivered with few complications if they are present as vertex-vertex [6]. In the current twin pregnancy report, the presentation of the fetuses was vertex-vertex as well. Elective C/S was planned at 37 weeks' of gestation since fetal growth was adequate.

In conclusion, we have presented successful and safe management of single shot spinal anaesthesia of a woman affected by asymptomatic type 1 ACM

without syringomyelia. Although neuraxial anaesthesia may carry theoretical risk of neurologic symptoms due to the decrease in the cerebrospinal fluid pressure, the spinal anaesthesia and the cesarean procedure was uneventful for twin pregnancy as well.

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**Konflikt interesów / Conflict of interest**

Brak/None

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