



ORIGINAL ARTICLE

## Risk of developmental dysplasia of the hip in patients subjected to the external cephalic version<sup>☆</sup>



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Received 26 January 2017; accepted 27 March 2017

Available online 3 February 2018

### KEYWORDS

Developmental dysplasia of the hip;  
External cephalic version;  
Breech presentation

### Abstract

**Introduction:** Developmental dysplasia of the hip (DDH) refers to the spectrum of abnormalities of maturation and development of the hip. Breech presentation is associated with DDH. This risk factor can be modified by external cephalic version (ECV). The aim of this study is to evaluate the incidence of DDH in patients who successfully underwent ECV, as well as to evaluate need for these children (breech for a period during gestation) to be included in the DDH screening protocol.

**Material and methods:** A prospective cohort study was conducted in the Hospital Universitario de Vigo from January 1, 2015 to December 31, 2015. It included children born in cephalic presentation after a successful ECV, as well as children born in breech presentation. They all were screened for DDH by ultrasound examination of the hip.

**Results:** Out of a total of 122 newborns included in the study, ECV was attempted on 67 (54.9%), of which 35 (52.2%) were successful. Out of the 14 children diagnosed with DDH, 3 of those born in cephalic presentation after a successful ECV were found to be normal on physical examination.

**Conclusions:** Successful ECV is associated with a lower incidence of DDH as regards breech presentation. However, these patients should be included in the DDH screening protocol for the early detection of this disorder.

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<sup>☆</sup> Please cite this article as: Sarmiento Carrera N, González Colmenero E, Vázquez Castelo JL, Concheiro Guisán A, Couceiro Naveira E, Fernández Lorenzo JR. Riesgo de displasia del desarrollo de la cadera en pacientes sometidos a versión cefálica externa. An Pediatr (Barc). 2018;88:136–139.

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**PALABRAS CLAVE**

Displasia del desarrollo de la cadera;  
Versión cefálica externa;  
Presentación podálica

**Riesgo de displasia del desarrollo de la cadera en pacientes sometidos a versión cefálica externa****Resumen**

**Introducción:** La displasia del desarrollo de la cadera (DDC) engloba un espectro de anomalías que afecta a la maduración y desarrollo de la cadera. La presentación podálica es uno de los factores de riesgo asociado a esta patología y puede ser modificada en las últimas semanas de gestación mediante la versión cefálica externa (VCE). El objetivo de nuestro trabajo es determinar la incidencia de DDC en pacientes sometidos a una VCE exitosa, así como valorar la necesidad de incluir a estos niños (podálicos durante gran parte de la gestación) en el protocolo de cribado de DDC.

**Material y métodos:** Estudio de cohortes prospectivo realizado en el Hospital Universitario de Vigo entre el 1 de enero y el 31 de diciembre del 2015. Participaron niños sometidos a VCE y niños podálicos no sometidos a VCE. A todos ellos se les realizó una ecografía de cadera para estudiar la incidencia de DDC en ambos grupos.

**Resultados:** Se incluyeron un total de 122 pacientes. Se intentó realizar VCE en 67 (54,9%) siendo exitosa en 35 (52,2%). De los 122 niños: 14 fueron diagnosticados de DDC mediante ecografía. Tres (8,5%) de los niños con DDC nacieron en presentación cefálica tras VCE exitosa con exploración física de caderas normal al nacimiento.

**Conclusiones:** La VCE reduce el riesgo de DDC con respecto a la presentación podálica pero de no incluir a los niños versionados con éxito en el protocolo de cribado de DDC, corremos el riesgo de no detectar precozmente esta patología.

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**Introduction**

Developmental dysplasia of the hip (DDH) is a spectrum of anomalies that affect the maturation of the hip in the newborn in which the femoral head and acetabulum have an abnormal relationship and development. In the first weeks of life, newborns may have a physiological laxity in the hip joint and immaturity of the acetabulum that resolves spontaneously and with no sequelae.<sup>1</sup> However, uncorrected DDH is associated with significant long-term comorbidities, such as gait abnormalities, chronic pain or degenerative disease of the coxofemoral joint.<sup>1,2</sup> Certain factors, such as female sex, first-born status, breech presentation (after 34 weeks' gestation), reduced foetal movement, oligohydramnios or a positive family history of DDH increase the risk of this disease.<sup>3</sup>

Every risk factor for this disease is non-modifiable, except for the presentation of the foetus at birth. External cephalic version (ECV) aims at decreasing the frequency of caesarean sections performed due to breech presentation, thus reducing the maternal and child morbidity and mortality associated with this type of delivery.<sup>4</sup> External cephalic version is a relatively easy, safe and inexpensive manoeuvre. After sedating the mother, the obstetrician externally manipulates the foetus by exerting mild pressure on the abdominal wall of the mother to shorten the foetal long axis and achieve its full rotation.<sup>4,5</sup> To guarantee the safety of the foetus, the foetal heart rate is monitored throughout the procedure.

In the first days of life, the paediatrician carries out a comprehensive and thorough physical examination of the child that includes an assessment of the hip joints. A meticulous examination is essential, and especial attention should be paid to the examination of the hip in patients with risk factors for DDH. It is important to remember that the earlier the diagnosis is made, the easier and more effective the treatment will be, and the better the final outcome.<sup>6-8</sup> In Spain, imaging tests are not performed routinely. An ultrasound scan of the hip is performed in patients with abnormal findings on physical examination or who have 2 or more risk factors (female sex, breech presentation at birth and/or history of DDH in first-degree relative).<sup>9</sup> In patients with normal findings in the physical examination, the best time to do the ultrasound scan is 6 weeks after birth, when the hip is sufficiently mature to avoid false positives yet plastic enough for conservative treatment to be successful.

External cephalic version changes the presentation of foetuses that have been in a breech position during part of the pregnancy in the last weeks of gestation. However, since these children are finally delivered head-first, they are not considered at risk of DDH and are not included in the current protocol. The aim of our study was to determine the incidence of DDH in patients successfully turned with ECV and assess whether the current protocol should be changed to include patients that were turned successfully, considering them as breech for the purposes of screening.

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