We present a case of late dislocation of the hip in a 30-month-old girl. Her hip was clinically stable at birth and an ultrasound scan at six weeks was normal. She had no additional risk factors for developmental dysplasia. She underwent anterior open reduction with a femoral osteotomy.

Ultrasound screening is widely used in the early diagnosis of developmental dysplasia of the hip (DDH). It has been shown to decrease the incidence of late presentation of dislocation, but it has not been shown in large prospective randomised trials whether it is better than careful screening by physical examination performed by an experienced examiner. There have been a small number of reports of late identification of DDH following an earlier normal screening by ultrasound. Such patients either had instability at birth or risk factors such as a breech presentation. We present a case of late dislocation in a 30-month-old girl with stable hips at birth, a normal static ultrasound at six weeks and without any other risk factors for DDH.

Case report
A female child was born at term by normal vaginal delivery with cephalic presentation. Clinical screening of her hips using the tests of Barlow and Ortolani, performed by a paediatric senior house officer and a paediatric registrar after birth, was normal. A maternal history of ‘clicky hips’, but not of a true hip dysplasia, resulted in the child being referred for an ultrasound scan. This was performed on both hips at six weeks of age, as described by Graf. She was noted to have bilateral Graf 1 hips (alpha angles: left 73°, right 66°) (Fig. 1). Cover of the femoral head on the left side was 69% and on the right 71%. The lower normal limit in females is 44%. A paediatrician reviewed her at eight weeks. There was no limb-length discrepancy and both hips remained stable when the Barlow and Ortolani tests were repeated, and she was discharged accordingly. Her developmental milestones were normal. She started walking at 14 months old but was noted to be toe walking on the right side at 30 months. On examination she had shortening of the right leg and limitation of abduction of the right hip. She was otherwise normal. Radiographs demonstrated a dislocation of her right hip (Fig. 2) and she underwent uncomplicated anterior open reduction and femoral osteotomy.

Discussion
Universal ultrasound screening of newborn hips has been advocated to reduce the late presentation of DDH. In a large randomised trial selective screening has been shown to have no significant effect on the rate of late presentation compared with universal screening. In the United Kingdom most centres undertake selective screening of the newborn for DDH on the basis of risk factors in the history or an abnormal physical examination. Most abnormalities detected on ultrasound in the normal newborn hip resolve as the child grows. This case is interesting for a number of reasons. Our patient had no risk factors for DDH other than female gender. Rafique et al described a case of late presentation of DDH with normal ultrasound at birth, but this child was a breech presentation and had a dislocatable contralateral hip at birth.

Our patient had stable hips documented by two examiners at birth as well as by a consultant paediatrician at eight weeks. Hips that are clinically unstable at birth can stabilise later. However, late dislocation of the hip following an earlier normal examination by experienced practitioners in the neonatal period has been recorded and was thought to have occurred because of persistent acetabular dysplasia. With the advent of ultrasound screening acetabular dysplasia can be diagnosed early. Late
dislocation has also been described in two cases with a positive Barlow sign at birth where the affected hips stabilised with a subsequent normal ultrasound examination, only to dislocate later.5

Universal screening of the newborn is advocated for the early diagnosis and treatment of DDH and to reduce the rate of late presentation. This has the disadvantages of considerable expense and the risk of over-treatment. Treatment with splints or a harness is not without risk and multiple examinations can lead to parental anxiety.17 Universal ultrasound screening is thought to be preferable to clinical screening by inexperienced clinicians.18,20 However, our patient would have presented late even with a universal screening programme as her ultrasound scan was normal at six weeks. It remains unclear as to whether a dynamic ultrasound examination, as described by Harcke et al.,21 would have shown signs of instability in the presence of clinically stable Graf type I hips with normal femoral cover. Although studies have reported the elimination of late presentation of DDH through universal screening,2 late cases have been reported with normal clinical examination by experienced practitioners,16 as well as after normal ultrasound screening.4,5

It is widely agreed that infants with normal ultrasound examination can be safely discharged without further radiological follow-up.22,23 However, this case raises concerns that a small number of late dislocations may still occur using such a protocol. Recently Imrie et al24 reported an incidence of hip dysplasia requiring treatment of 29% at five months in breech presentations who had a normal ultrasound screening at six weeks. The term DDH replaced congenital dislocation of the hip as it embraced all the variants of the condition and recognised a spectrum of clinical and anatomical abnormalities. As the neonatal hip develops, most of the abnormalities detected by ultrasound will improve, as well as clinical instability. There is debate as to whether late presentation of DDH implies that a normal hip is becoming dysplastic or that a problem has been identified which was not appreciated earlier.17

**Supplementary material**

A further opinion by Dr S. Frick is available with the electronic version of this article on our website at www.jbjs.org.uk

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

**References**


