



# Rectus Abdominis Diastasis in Twin with Gross Motor Delay: A Case Report

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## Introduction

Rectus abdominis diastasis (RAD) is an anatomical term describing a condition where the two rectus abdominis muscles are abnormally separated. RAD occurs when the fascia between the two rectus abdominis muscles is relatively weak. Rectus abdominis diastasis is rare in the neonatal and pediatric populations and is typically a component of congenital syndrome malformations. Here, we present a case of non-syndromic congenital rectus abdominis diastasis in preterm, low birth weight twins accompanied by gross motor developmental delay.

## Case

The patients are identical twins born via cesarean section at 23 weeks due to cervical incompetence. The first child of the twins was born weighing 490g, while the second child weighed 480g at birth. They were admitted to the neonatal intensive care unit for neonatal respiratory distress syndrome and jaundice. On the brain magnetic resonance imaging (MRI) performed due to the low tone observed in the infant, bilateral intraventricular hemorrhage (IVH) was detected. The patients received rehabilitation therapy for language delay and gross motor developmental delay at another hospital, and they were treated for growth delay due to growth hormone deficiency. Upon their visit to our clinic for continued rehabilitation therapy, the patients were 40 months old. They were able to descend low stairs independently but unable to climb low stairs independently. Overall, they showed low muscle tone and a kyphotic posture while sitting. At 42 months of age, Developmental evaluation of the patient using the Bayley III scales of Infant Development shows gross motor delay. During ongoing rehabilitation therapy, a protruding mass was visually observed during abdominal muscle exercises, such as raising legs. Subsequently, abdominal ultrasound was performed for evaluation, revealing widening between the left and right rectus muscles in both children. They were diagnosed with rectus abdominis diastasis, with defect ratio of  $2.3 > 2$  in the first child and  $3.0 > 2$  in the second child.

## Conclusion

In this case, the patients were preterm, low birth weight twins who exhibited prominent developmental delay in gross motor skills and overall low tone. RAD was diagnosed as a protruding mass observed during abdominal muscle exercises. RAD has been observed in children with early-onset scoliosis, overall low tone, and preterm infants. Therefore, considering the possibility of RAD in preterm infants showing low tone and prominent developmental delay in gross motor skills seems necessary. This could aid in determining the need for future rehabilitation directions and the presence of early intervention strategies.

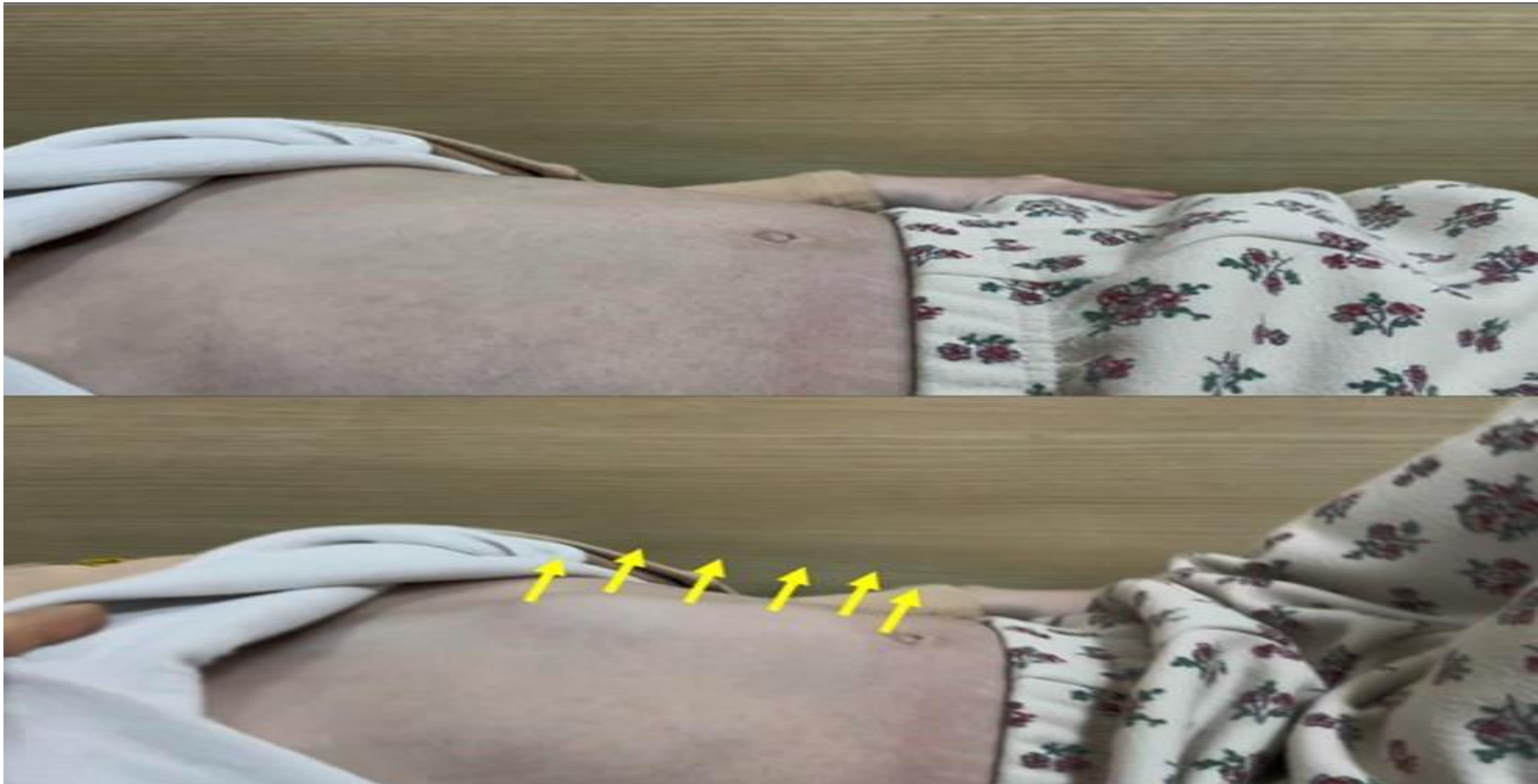


Figure 1. Top, resting state Bottom, Leg raising state (Situation causing increase in intra-abdominal pressure) with diffuse fusiform bulging mass highlighted in yellow arrow.

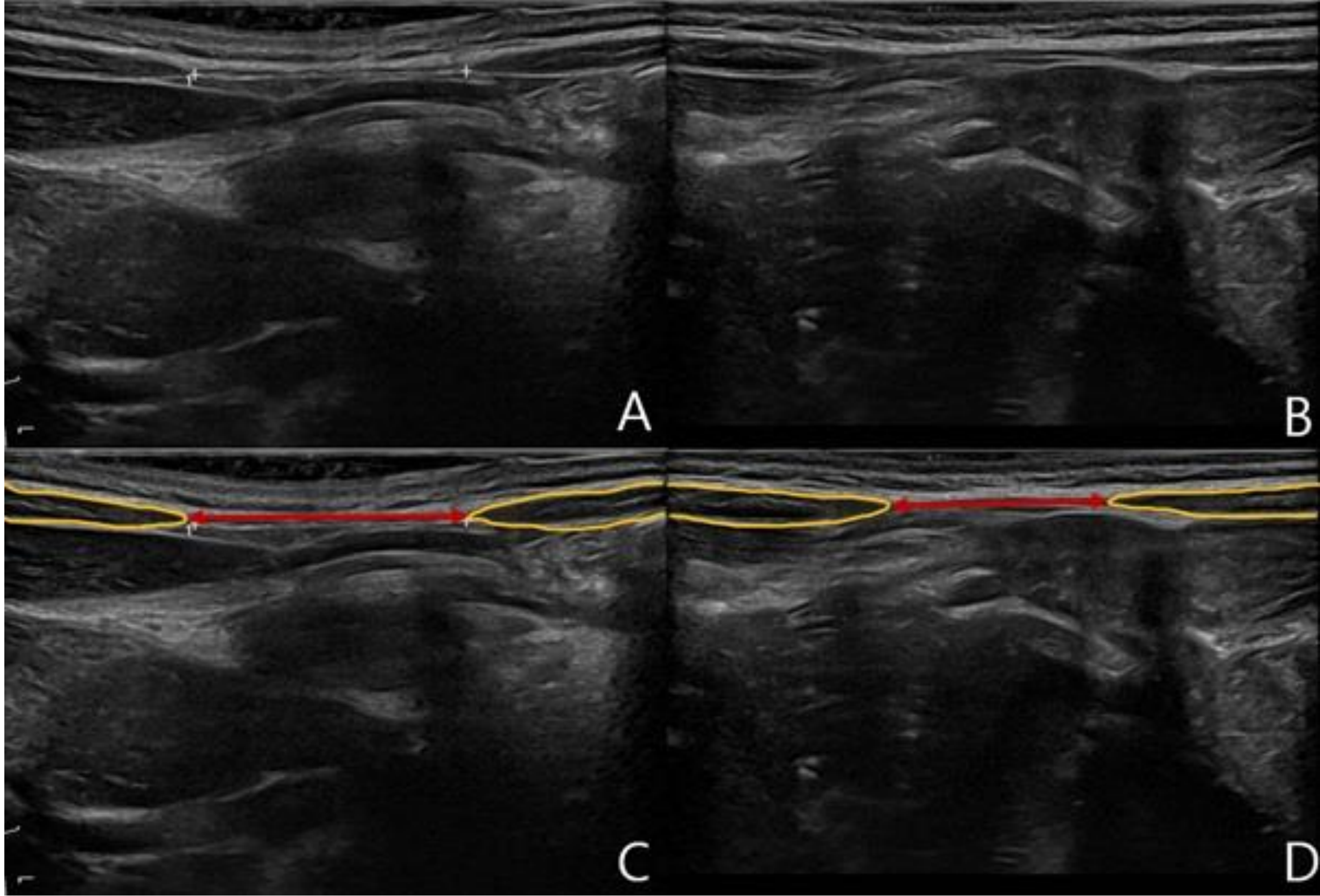


Figure 2. Transverse view of above umbilicus. Top, A.Twin 1st Baby. B. Twin 2nd baby. Bottom, Same image with rectus abdominis in yellow, between rectus abdominis, linea alba in red. Connecting to epigastric space shows widening between the left and right rectus muscle without protrusion of visceral fat or bowel during resting. C.Maximum transverse width: 3.7cm, Maximum craniocaudal length: at least 5cm, Rectus to defect ratio: 2.3. D. Maximum transverse width: 2.4cm, Maximum craniocaudal length: at least 4cm, Rectus to defect ratio: 3.0.

Developmental evaluation (The Bayley III)	Twin 1 <sup>st</sup> Baby (42 months of age)		Twin 2 <sup>nd</sup> Baby (41months of age)	
	DAE	Composite score	DAE	Composite score
Cognitive	42months<	105	42months<	105
Receptive communication	42months<	100	40-42months	100
Expressive communication	37-39months		40-42months	
Fine motor	40-42months	76	42months<	82
Gross motor	17months		18months	
Social-emotional	-	85	-	95

DAE; Developmental age equivalent

Table 1. Developmental evaluation of the patient using the Bayley III scales of Infant Development.