Case report

A female infant was born at 31 weeks due to poor fetal growth and history of a previous pregnancy resulting in intra-uterine death of a baby noted to have short limbs. This infant also had short limbs and continued to have faltering growth, length and head circumference below the 0.4th centile despite nutritional intervention. The neonatal period was complicated by Klebsiella meningitis. She had severe dystonia, myoclonic seizures, cerebral visual impairment and feeding difficulties leading to gastrostomy insertion. There has not been evidence of neurodevelopmental progression with age to date (she is now 2 years old). MRI head showed atrophy of the corpus callosum with an abnormal brainstem, flattened pons. Trio whole exome sequencing identified that she was compound heterozygous for a likely pathogenic TRAPPC12 nonsense variant and a TRAPPC12 missense variant of uncertain significance. TRAPPC12 is not currently included in the Epilepsy gene panels available in the UK NHS services.

Discussion: Trafficking protein particles (TRAPP) complexes function in membrane trafficking from the endoplasmic reticulum to and through the Golgi body. 3 children from 2 unrelated families have previously been described with biallelic TRAPPC12 variants with a strikingly similar phenotype to our patient, including severe developmental delay, microcephaly, spasticity with characteristic findings on MRI of corpus callosum abnormalities with pons hypoplasia and diffuse brain atrophy. Fibroblasts from those individuals showed fragmented Golgi that could be rescued by expression of wild-type TRAPPC12. Functional work on fibroblasts derived from our patient is ongoing in order to clarify the significance of these variants. Ongoing research aims to identify the precise function of this gene which may in turn lead to treatment options. This case report highlights the clinical and radiological findings that appear to be typical in TRAPPC12-related disorders.