ABSTRACT: Congenital muscular dystrophy (CMD) is a heterogeneous group of disorders which is associated with more or less degrees of cerebral involvement. There are four separate entities within CMD nosology. Among these Fukuyama’s CMD (FCMD) is highly prevalent in Japan, whereas the classic form with normal or subnormal intelligence, also known as the occidental type, covers the vast majority of cases in the West. We report a case of FCMD seen in a Turkish child.

RéSUMÉ: Dystrophie musculaire congénitale de type Fukuyama chez un enfant Turque La dystrophie musculaire congénitale (DMC) est un groupe hétérogène de maladies qui sont associées à différents degrés d’atteinte cérébrale. La DMC en tant qu’entité nosologique comprend quatre entités séparées. Parmi celles-ci, la DMC de Fukuyama (DMCF) a une prévalence élevée au Japon, alors que la forme classique avec une intelligence normale ou subnormale, aussi connue comme étant la forme occidentale, couvre la grande majorité des cas identifiés dans l’hémisphère ouest. Nous rapportons un cas de DMCF observée chez un enfant turque.

CASE REPORT

A 27 month old female child coming from the northern part of Turkey was referred to our clinic for evaluation of floppiness and developmental delay since birth. She was born of non-consanguineous parents as the second child. An 8 year old male sibling is normal. There was no family history of muscle disease or mental retardation. Feat movements were noted to be decreased in utero, but pregnancy was uneventful otherwise. Delivery was at term and was spontaneous vaginal. The birth weight was 3.1 kg. The neonatal period was complicated, also known as the occidental type, covers the vast majority of cases in the West. We report a case of FCMD seen in a Turkish child.

Fukuyama Type Congenital Muscular Dystrophy in a Turkish Child

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Congenital muscular dystrophy (CMD) is a unique type of muscular disorder characterized by probable autosomal recessive inheritance, early onset hypotonia, involvement of facial muscles, joint contracture and slowly progressive course. Mentality may or may not be involved. Clinical presentations are rather heterogeneous and several types of CMD have been described. Basically there are four major sub-groups within CMD nosology: classic occidental type CMD with normal or subnormal intelligence; Fukuyama’s CMD (FCMD); the cerebro-ocular dysplasia-muscular dystrophy syndrome (COD-MD); and some forms which do not fit in any category. Among these FCMD is distinguished by developmental central nervous system (CNS) abnormalities, severe mental retardation and related symptomatology. In Japan this seems to be one of the frequent causes of the floppy infant syndrome, whereas outside Japan the association of CMD with CNS involvement is very rare, and only a few cases have been reported.

We report a case of FCMD observed in a 27 month old Turkish child.

The etiology of FCMD remains unclear. A genetic factor may be important, but some authors have suggested an infectious etiology. FCMD has even been reported in Japanese infants conceived and born outside Japan. The major changes in the CNS represent an arrest in the migration and differentiation of neurons early in the course of fetal development. This defect is expressed as microcephaly, polymicrogyria, pachygyria and heterotopias. Other abnormalities include fusion of the frontal lobes, hydrocephalus, periventricular cysts, optic nerve atrophy, hypoplasia of pyramidal tracts, reduction in anterior
The important hallmarks in FCMD are early onset hypotonia, facial muscle involvement, severe mental retardation along with congenital degenerative changes in muscle and highly elevated CK levels. Our case fits into this group with its unique features, though we lack radio-anatomical correlation of the CNS.

The most striking CT changes, i.e. prominent white matter hyperlucency, is usually seen around one year of age in FCMD. As the child grows older, hyperlucency diminishes, and is replaced by normalization.14 Delayed myelination processing is thought to be the responsible mechanism. CT findings in our patient reveal only a limited extent of hypodensity in the white matter; this is probably because she has already passed one year of age.

The abundance of FCMD cases in Japan is not known and it is uncertain whether this is due to a definite varying incidence of CMD in different geographic areas, or merely to authors’ interests. The existence of various forms of CMD is very likely associated with more or less marked disorders in cerebral organogenesis.15,16 Efforts should be made to routinely screen CMD patients regardless of mental status and autopsy studies wherever possible should be performed, to recognize more aspects of this heterogeneous disease.

REFERENCES