



Limb hypotrophy in a child with history of umbilical cord knots. Nerve ultrasound findings

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We have read with appreciation the paper by Okechi and coworkers about three cases of pediatric fibrolipomatous hamartomas of the median nerve [4]. The authors completed the diagnosis throughout magnetic resonance and ultrasound (US), showing the features of the lesions. These morphological data were used to support surgical intervention. Imaging is very useful for diagnosis. In particular, US is able to quickly show patient's anatomy and morphological alterations, even in peripheral nerve diseases. Its use in children is recommendable for the high tolerability and the absence of side effects [1, 3].

We present a five-year-old boy with fetal history of umbilical cord knots, around the left arm. The child presented hypoplasia of the whole left upper limb and strength deficit in hand extension. The left arm showed two sulci along its circumference, due to the umbilical cord knots. US examination found reduction in dimensions of radial and ulnar nerves. In particular, these nerves presented a cross-sectional area reduction up to

30%, in comparison with the contralateral side (Fig. 1). The nerves presented a normal course with no focal changes and extrinsic compressions. Hypotrophy with no echogenicity alteration was found in the left forearm muscles. A rehabilitation protocol aimed to the left upper limb muscle reinforcement and movement reeducation was planned. Probably, the vascular supplying in the upper limb, during fetal life, was decreased, due to the umbilical cord knots [5]. This condition caused a general hypoplasia of the limb with reduced development of the nerves [2].

The case confirms the US ability to provide morphological information about the nerves and the surrounding tissues, with the possibility to calculate nerve dimension and, especially, to exclude other causes of strength deficit, like compression or nerve lesions.

As Okechi and colleagues concluded, we recommend the completion of clinical and neurophysiological examination with imaging, in diagnosis of neuropathies [4].

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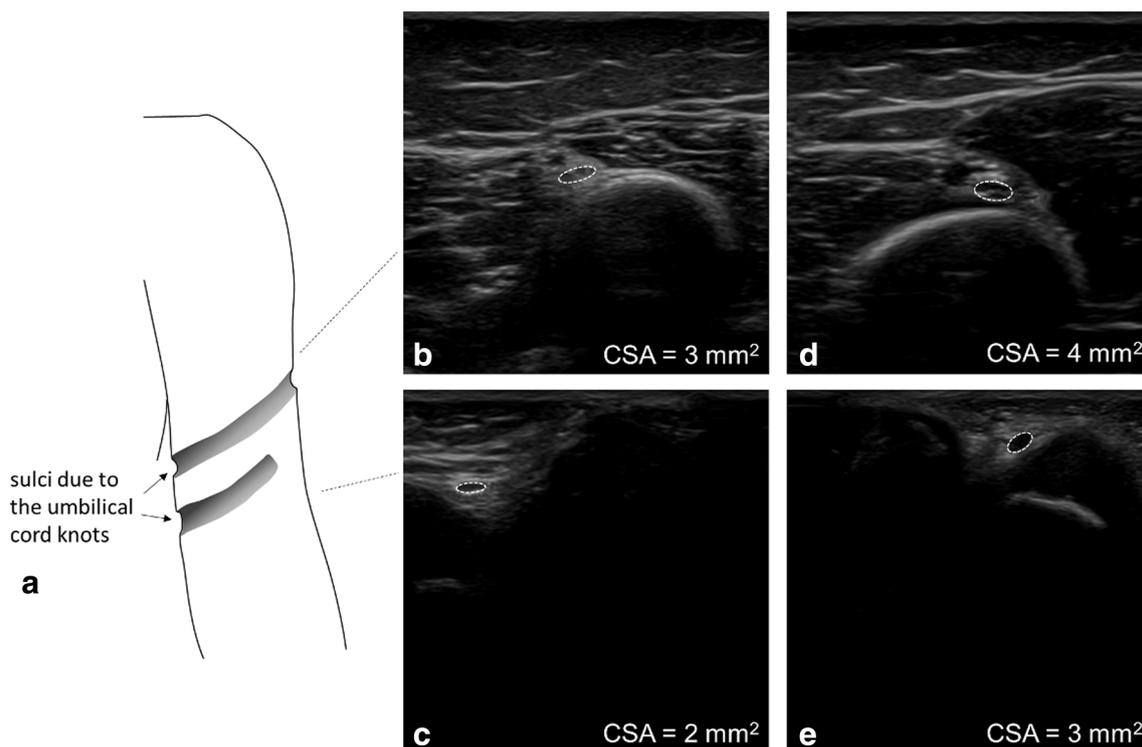


Fig. 1 **a** Schematic representation of the left upper limb. **b** Ultrasonographic picture of the left radial nerve (dotted line) at arm. **c** Ultrasonographic picture of the left ulnar nerve (dotted line) at elbow. **d**

Ultrasonographic picture of the right radial nerve (dotted line) at arm. **e** Ultrasonographic picture of the right ulnar nerve (dotted line) at elbow. The cross-section area (CSA) of each nerve in the shown site is written

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

Informed consent Informed consent from the parents of the participant is included in the study.

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