MRI OF FIBROMATOSIS COLLI*

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SUMMARY: Çakmakçı H, Kovanlıkaya A. (Department of Radiology, Dokuz Eylül University Faculty of Medicine, İzmir, Turkey). MRI of fibromatosis colli: case report. Turk J Pediatr 1999; 41: 505-508.

Magnetic resonance imaging (MRI) appearance of fibromatosis colli has been reported in only two cases in the literature. We herein describe the MRI findings in a case of fibromatosis colli: the signal intensity of the fusiform mass on T2 weighted images was slightly less than on T1 weighted images, consistent with the presence of some fibrous tissue within the muscle mass. *Key words: magnetic resonance imaging, fibromatosis colli.*

Fibromatosis colli is a benign fusiform mass associated with torticollis arising from the sternocleidomastoid muscle in the anterior neck. A history of birth trauma, difficult delivery, or breech delivery common[1-3]. The sonographic and computed tomography (CT) findings of fibromatosis colli have been described[1,2]. Magnetic resonance imaging (MRI) appearance has been described in very few cases in the literature[3,4]. This paper describes the MRI findings in a case of fibromatosis colli.

Case Report

A three-month-old girl, born by uncomplicated vaginal delivery, presentted to the ear, nose and throat (ENT) physician with a right neck mass. It was first noticed while the baby was crying or being fed. Initial ultrasound examination done at an outside facility revealed a right neck mass which had ill-defined margins with neighboring right thyroid and right submandibular glands (Fig. 1). The patient was referred to our MRI unit to delineate the relationship and determine the origin of the mass. The parents were also told that the infant had a potential malignancy. T1 and T2 weighted images showed a fusiform enlarged, mildly hypointense right sternocleidomastoid muscle (Fig. 2). No other neck mass was demonstrated. After MRI examination, radiological and clinical findings confirmed the diagnosis of fibromatosis colli.

Discussion

Fibromatosis colli has characteristic ultrasonographic and clinical features[1]. The diagnosis is made based on these findings. Usually a neck mass arises in a

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neonate approximately two weeks after birth and is associated with torticollis in 14-20 percent of cases. The mass may continue to increase in size for two four weeks or months. The infants are otherwise healthy. A history of birth trauma such as breech presentation, forceps, delivery, or difficult delivery is common[2-4]. Pre-existing intrauterine torticollis may contribute to a difficult delivery. An etiologic factor is traumatic compression of the neck during delivery which may

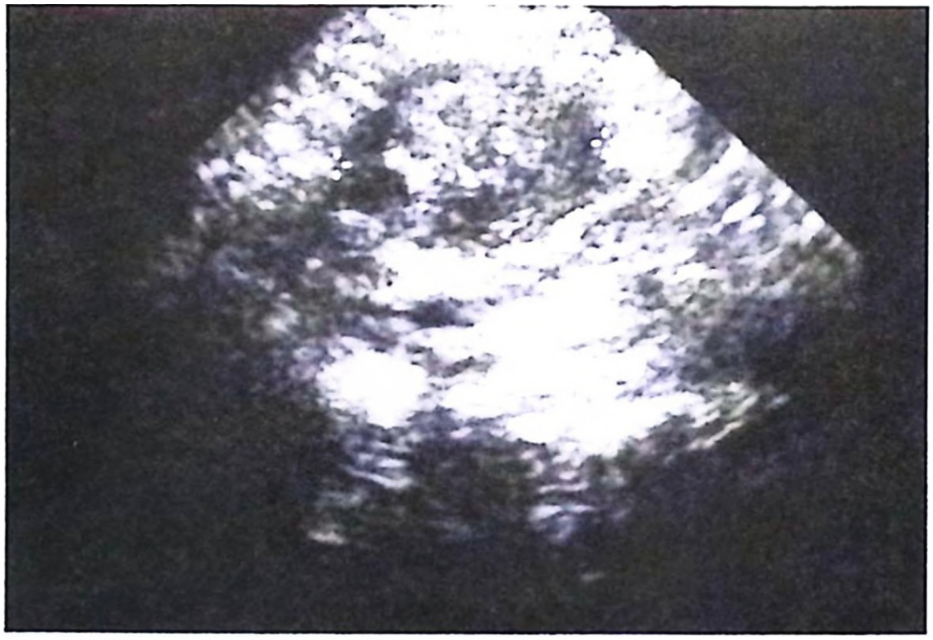

Fig. 1a

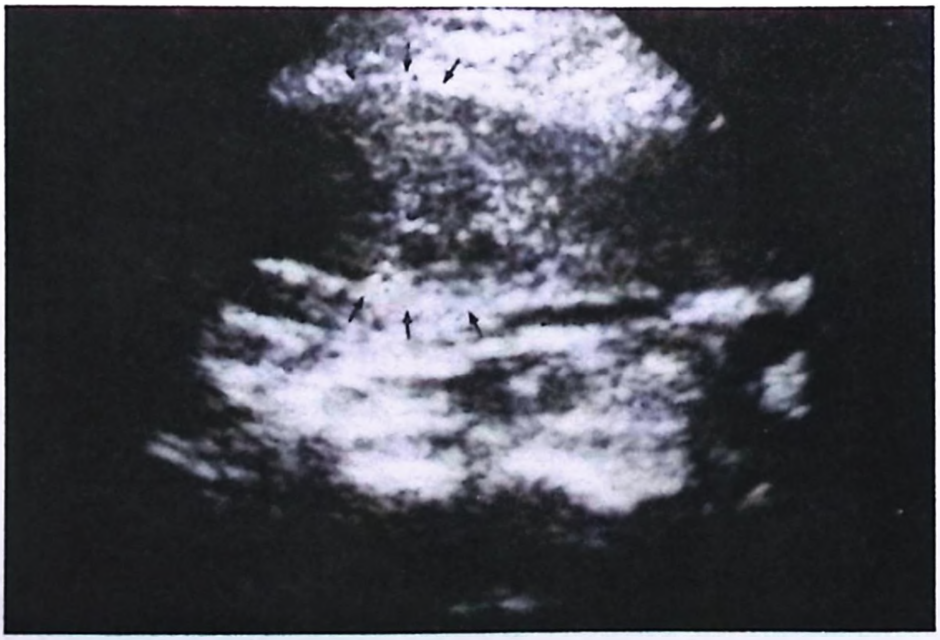

Fig. 1b

Fig. 1: Ultrasound of the right neck in transverse view (a) shows isoechoic mass-like appearance but longitudinal view (b) reveals fusiform enlargement of the right sternocleidomastoid muscle (arrows) at involved region of the neck.

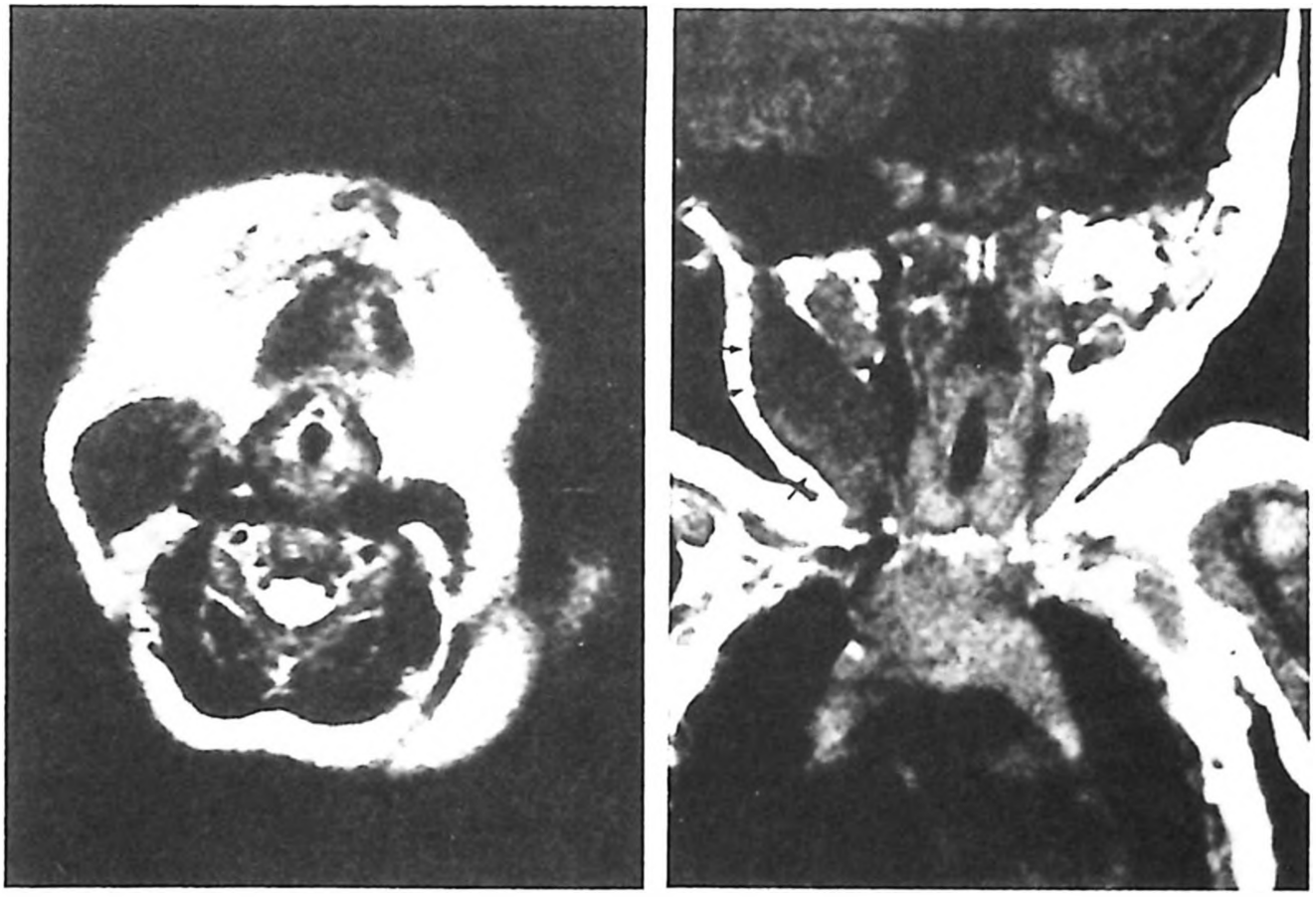

Fig. 2a

Fig. 2b

Fig. 2: Axial T2 weighted (a) and coronal T1 weighted (b) MR images confirm the fusiform enlargement of the right sternocleidomastoid muscle. On T2 weighted images, the signal intensity of the right sternocleidomastoid muscle is less than that of the normal left sternocleidomastoid muscle.

cause pressure necrosis and/or occlusion of the venous outflow of blood from the sternocleidomastoid muscle, resulting in edema in the muscle, degeneration of the muscle fibers, and then, fibrosis of the muscle[4]. Usually fibromatosis colli is unilateral and is more common in the right (73%) than the left (22%) neck. The mass usually resolves spontaneously over four to eight months with conservative management, either with stretching exercises or no treatment. The mass has been erroneously called a hematoma[1-5].

Sonography is the procedure of choice for diagnosis. On sonography focal or diffuse enlargement of the sternocleidomastoid muscle is present, usually in a fusiform configuration and in the lower two-thirds of the muscle. The mass moves synchronously with the sternocleidomastoid muscle. The echogenicity of the mass may be hyperechoic, isoechoic, or hypoechoic relative to normal muscle. Echogenic foci with acoustic shadowing due to calcifications have been reported[1].

Computerized tomography imaging of fibromatosis colli demonstrates focal or diffuse enlargement of the sternocleidomastoid muscle. Although the diagnosis of fibromatosis colli can be made by CT, ultrasound is the preferred modality because it is noninvasive, less expensive, easier to perform and does not involve radiation[2].

If an infant fails to follow the typical clinical course or develops other symptoms and/or physical findings not typical of the condition, further evaluation with CT and/or biopsy is necessary for diagnosis. MRI may be helpful for further evaluation of fibromatosis colli, by demonstrating the signal intensity of the mass and localizing the mass in the sternocleidomastoid muscle, as well as by differentiating it from neck masses arising from different anatomic structures. The solid soft tissue masses of the anterolateral neck include: lymphoma, rhabdomyosarcoma, other soft tissue sarcomas, neuroblastoma, inflammatory masses, and infectious or metastatic adenopathy. Rare benign soft tissue tumors include aggressive fibromatosis, cervicothoracic lipoblastomatosis, parathyroid adenoma, and plexiform neurofibroma. Imaging findings that are not characteristic of fibromatosis colli and may suggest the presence of another solid neck mass would include: irregular margins, mass extending beyond the confines of the sternocleidomastoid muscle, poor definition of surrounding fascial planes, and/or mass associated with adenopathy, bone involvement, intracranial or intraspinal extension, vascular encasement and airway compression[3-5]. In this case, on T2 weighted images the signal intensity of the mass was slightly less than on T1 weighted images, consistent with the presence of fibrous tissue within the muscle.

In order to avoid unnecessary invasive procedures to distinguish a benign condition from a malignant neck mass, such as fine needle aspiration biopsy, it is important to know the clinical and imaging features of fibromatosis colli, and sonography should be the initial modality of choice. If unexpected symptoms or physical findings develop, further evaluation with CT and/or MRI and/or biopsy are necessary for diagnosis.

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