ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 08 | August - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

FIBROMATOSIS COLLI IN A NEONATE: A CASE REPORT AND REVIEW

Radio-Diagnosis

Dr B N Rahul	MBBS, Postgraduate, Department of Radiology, Narayana Medical College Nellore.
Dr Krishna Teja Nerella	MD, Fellowship in Interventional, Associate Professor, Department of Radiology, Narayana Medical College Nellore
Dr Abhishek Pratapbhai Gohil	Postgraduate, Department of Radiology, Narayana Medical College Nellore
Dr Suneetha Pentyala	MD, Professor, Department of Radiology, Narayana Medical College Nellore
Dr Rama Krishna Rao Baru	MD, DNB, DMRD, Professor and HOD, Department of Radiology, Narayana Medical College Nellore.

ABSTRACT

Fibromatosis Colli, also referred to as congenital torticollis, is a rare condition observed in neonates, characterized by the development of a benign cervical pseudotumor. This pseudotumor arises due to the proliferation of benign fibrous tissue within the sternocleidomastoid muscle, leading to a distinctive fusiform enlargement. Although the precise cause of this fibrosis remains unclear, there is speculation that it may be associated with prenatal or perinatal trauma, potentially leading to hemorrhage and subsequent fibrotic changes. The utilization of ultrasound is of paramount importance in confirming the diagnosis of fibromatosis colli and for monitoring the condition's progression over time. We hereby present a case involving a 12-week-old new-born who was diagnosed with fibromatosis colli through ultrasonography later confirmed by biopsy. Initially, the primary mode of treatment involved physiotherapy. However, as the condition persisted, a lateral surgical exploration was deemed necessary. In conclusion, fibromatosis colli, though rare, warrants early diagnosis and appropriate management. Ultrasonography serves as a valuable tool in both confirming the diagnosis and guiding treatment decisions. In this particular case, physiotherapy was the initial approach, and when required, surgical intervention was subsequently pursued.

KEYWORDS

Fibromatosis Colli, Congenital Torticollis, Neonate, Cervical Pseudotumor, Sternocleidomastoid Muscle, Ultrasound, Physiotherapy, Surgical Exploration.

INTRODUCTION

Fibromatosis Colli, a rare condition observed in new-borns, manifests as a benign cervical mass(1–7). This condition presents as either a focal or diffuse enlargement of the sternocleidomastoid muscle, resembling a cervical pseudotumor(2,4–7). While the precise cause remains elusive, there is a suggestion that factors such as birth trauma or in utero muscle injury could potentially contribute to the development of this pseudotumor(1,6,7).

Diagnosing fibromatosis colli primarily relies on clinical evaluation(1,6,7). Unilateral cervical enlargement often accompanies facial asymmetry and limited neck movement, a combination referred to as congenital torticollis(1,6,7). However, ultrasound plays a crucial role in confirming the diagnosis, ruling out other potential conditions, and facilitating ongoing monitoring(6,7).

Typically, the natural progression of this pseudotumor is spontaneous resolution, occurring within a span of 4 to 8 months(6,7). As such, the primary mode of treatment involves physiotherapy(1,6,7).

We present here a case report involving a twelve-week-old new-born who presented with a noticeable right cervical swelling, as reported by the mother a few days prior.

Case Presentation

A twelve-week-old male new-born was admitted to the hospital due to the presence of a right cervical swelling and limited neck movement. A review of the mother's obstetrical history revealed that her pregnancy had reached full term but had been inadequately monitored. The new-born was delivered through natural assisted birth, and the delivery process was complicated by dystocia resulting from a shoulder presentation.

During the clinical examination, a palpable, firm swelling was evident on the right side of the neck. Importantly, there were no signs of inflammation accompanying this observation. Subsequent cervical ultrasound examination revealed a fusiform thickening of the right sternocleidomastoid muscle. This enlargement exhibited a uniform echo-structure, preserving the muscle's natural fibrillar arrangement. Notably, there were no significant deviations in the internal vascularity of the affected area. The dimensions of this pseudotumor measured [2.5 x 1.9cm] in contrast to the corresponding measurements on the left side, with no discernible mass effect on the adjacent vascular axis or surrounding anatomical structures(Figure 1 & 2). The spectral Doppler analysis of the lesion demonstrates high resistance arterial flow patterns, characterized by a high systolic velocity, reduced diastolic flow, and a high resistive index (RI) value (Figure 2). Additionally, cervical lymphadenopathies were observed in conjunction with these findings. It's worth highlighting that, apart from these observations, the rest of the cervical ultrasound assessment yielded results within the parameters of normalcy.

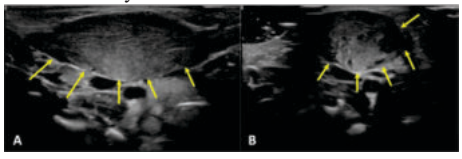

Figure 1: Images A (longitudinal), Image B (Axial) shows ultrasound examination of the neck reveals a well-defined, ovoid, hypoechoic mass within the sternocleidomastoid muscle, typically located in the middle portion of the muscle. The lesion is characterized by homogeneous echotexture, with loss of normal striated architecture of muscle (Yellow arrows). The mass demonstrates mild posterior acoustic enhancement, resulting in increased echogenicity of structures deeper to it. There is no evidence of calcifications or necrosis within the mass. The surrounding tissues appear normal, without signs of infiltration or distortion. These findings are consistent with fibromatosis colli, a benign self-limiting condition commonly seen in infants

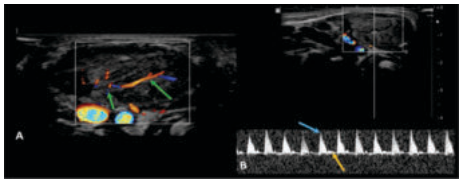

Figure 2: Images A (Colour doppler), Image B (Spectral) shows

Ultrasound examination of the neck reveals a focal lesion within the sternocleidomastoid muscle, consistent with fibromatosis colli. The lesion appears as a well-defined, hypoechoic mass with mild internal vascularity (Light green arrows) demonstrated on Colour Doppler imaging (Image A). The spectral Doppler analysis of the lesion demonstrates high resistance arterial flow patterns, characterized by a high systolic velocity (Light blue arrow), reduced diastolic flow (Orange arrow), and a high resistive index (RI) value. These findings are indicative of increased vascularity within the lesion

Other than the aforementioned symptoms, no additional clinical indications were observed. Subsequent to these diagnostic findings, a confirmation of the diagnosis of right-sided Fibromatosis Colli was established.

In the initial stages of treatment, the newborn received motor physiotherapy. The medical team advised the parents to gently rotate the child's head toward the side of the lesion five to six times daily, holding it in that position for a few seconds. However, given the limited progress observed with physiotherapy, a decision was made to proceed with surgical exploration.

This comprehensive approach underscores the importance of thorough evaluation and treatment in cases of congenital torticollis, ensuring the best possible care for the new-born's condition.

DISCUSSION

Fibromatosis Colli is a rare medical condition, estimated to have a prevalence of around 0.4%(6,7). It is characterized by a benign proliferation of fibrous tissue within the sternocleidomastoid muscle(5–7). Typically, new-born's appear healthy at birth but subsequently develop a unilateral neck mass and restricted neck movement, typically manifesting two to four weeks after birth(4,7). This condition is predominantly observed on the right side (73% of cases) and is more common in males(7). While it is often associated with birth trauma and challenging deliveries, such as the use of forceps or breech birth, the exact underlying cause remains a matter of debate(2–4,7). Interestingly, some cases of Fibromatosis Colli have been reported without any history of birth trauma(1,3–5,7). Potential causes include fetal malposition in utero, muscle trauma during pregnancy or delivery, and reduced blood flow to the muscle, eventually leading to fibrosis(1–7). Other factors, such as infection or heredity, have also been suggested as possible contributors (1–7). Infections may result from a septic thrombus that diminishes blood flow to the sternocleidomastoid muscle, while heredity is considered in cases of familial congenital torticollis among siblings, particularly in the absence of birth trauma (1–7).

The diagnosis of Fibromatosis Colli primarily relies on clinical evaluation, with suspicion arising in cases of unilateral cervical swelling and a history of birth trauma(1,5–7). However, ultrasound serves as the primary imaging modality to confirm the diagnosis, boasting a sensitivity of 100%(7). It is invaluable for ruling out lymph node involvement, invasion of adjacent structures, and the presence of mass effects(7). Ultrasound is the gold standard due to its accessibility, cost-effectiveness, and lack of ionizing radiation(1,5–7). Typically, it reveals a fusiform or ellipsoid thickening of the sternocleidomastoid muscle, often with well-defined margins(1,5–8). Hyperechoic foci within the mass may suggest prior hemorrhage, but a distinct mass or collection should not be identified(7).

In cases where ultrasound results are inconclusive, further assessment using CT may be necessary, although this exposes the newborn to ionizing radiation. CT typically reveals an iso-attenuated enlargement of the sternocleidomastoid muscle with normal surrounding structures(1,5–7)(9). It also aids in confirming the absence of airway or vascular compression, thereby eliminating other potential diagnoses(7). Biopsy of the mass is generally discouraged, but cytology may reveal benign fibroblasts, degenerate and atrophic smooth muscle, and an absence of hemorrhage or inflammation(5–7). Collagen may be present alongside a number of benign, bare nuclei and muscle giant cells in the background(5–7).

Treatment primarily involves a conservative approach, as most cases resolve with observation and physiotherapy(5). This involves gently and repeatedly turning the new-born's neck toward the side of the lesion five to six times daily, holding it in that position for a few seconds, over several months until the swelling diminishes(5–7). Even without treatment, Fibromatosis Colli tends to spontaneously resolve within four to eight months(5–7). In rare, refractory cases, alternative treatments such as Botulinum toxin type A injections or surgical tenomyotomy may be considered(7,10).

In the presented case, where the baby's torticollis was deteriorating despite conservative measures, the parents and pediatric surgeon opted for surgical exploration. A biopsy of the surgical specimen confirmed the diagnosis of Fibromatosis Colli.

CONCLUSION

In conclusion, Fibromatosis Colli is a rare condition characterized by benign fibrous tissue proliferation within the sternocleidomastoid muscle, typically presenting as a unilateral neck mass and restricted neck movement in new-born's. While it is often associated with birth trauma and difficult deliveries, its exact etiology remains debated. Ultrasound is the primary diagnostic tool, offering high sensitivity and accessibility, with typical findings of sternocleidomastoid muscle thickening. Treatment primarily involves conservative measures, such as physiotherapy, with spontaneous resolution typically occurring within several months. In refractory cases, surgical exploration may be considered. Early recognition and appropriate management are crucial for achieving the best outcomes in affected new-born's.

REFERENCES

1. Khan S. Fibromatosis Colli - A Rare Cytological Diagnosis In Infantile Neck Swellings. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH. 2014;
2. Adamoli P, Pavone P, Falsaperla R, Longo R, Vitaliti G, Andaloro C, et al. Rapid Spontaneous Resolution of Fibromatosis Colli in a 3-Week-Old Girl. Case Rep Otolaryngol. 2014;2014:1–4.
3. Chaturvedi A, Chaturvedi A, Stanescu AL, Blickman JG, Meyers SP. Mechanical birth-related trauma to the neonate: An imaging perspective. Insights Imaging. 2018 Feb 22;9(1):103–18.
4. Passarello L, Bhurawala H. Fibromatosis colli: An infant with neck swelling. Aust J Gen Pract. 2019 Nov 1;48(11):751–2.
5. Khalid S, Zaheer S, Wahab S, Azfar Siddiqui M, Redhu N, Yusuf F. Fibromatosis Colli: A Case Report. Oman Med J. 2012 Nov 16;27(6).
6. Oliveira JC, Abreu MS, Gomes FM. Sternocleidomastoid tumour in neonate: fibromatosis colli. BMJ Case Rep. 2018 Jan 10;bcr-2017-223543.
7. Nasri S, Afilal I, Missaoui Z, Aggari H El, Kamaoui I, Aichouni N, et al. Fibromatosis Colli: A case report. Radiol Case Rep. 2022 Mar;17(3):693–5.
8. Lin JN, Chou ML. Ultrasonographic study of the sternocleidomastoid muscle in the management of congenital muscular torticollis. J Pediatr Surg. 1997 Nov;32(11) :1648–51.
9. Crawford S, Harnsberger H, Johnson L, Aoki, Giley J. Fibromatosis colli of infancy: CT and sonographic findings. American Journal of Roentgenology. 1988 Dec 1;151(6):1183–4.
10. Joyce MB, de Chalain TMB. Treatment of Recalcitrant Idiopathic Muscular Torticollis in Infants with Botulinum Toxin Type A. Journal of Craniofacial Surgery. 2005 Mar;16(2):321–7.