An Atlas of Lumps and Bumps: Part 19

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Sternocleidomastoid Tumor of Infancy

Sternocleidomastoid tumor of infancy, also known as fibromatosis colli or muscular fibromatosis of infants, is the most common cause of neck mass and torticollis in infants.[1-3] The incidence of sternocleidomastoid tumor is estimated to be 0.4% of live births.[2,4-7] The male-to-female ratio is approximately 3:2.[8] There is no racial predilection.[3]

The exact etiology of this condition is not known. Sternocleidomastoid tumor is more common in primiparous birth, breech presentation, prolonged or difficult labor, and breech delivery.[4,5,9,10] Birth trauma may result in muscle stretching or tearing with resultant bleeding and hematoma formation, which may be followed by fibrosis and muscle contraction.[8,11] Sternocleidomastoid tumor may also be a sequela of an intrauterine or perinatal compartment syndrome with an obstructed venous outflow in the sternocleidomastoid muscle.[12] Since the tumor can develop following cesarean section and in association with other congenital lesions (such as talipes equinovarus, metatarsus adductus, mandibular hypoplasia, spinal deformities, and hip dysplasia), an intrauterine influence is thought to be responsible in at least some of the cases.[5,9] Sternocleidomastoid tumor may result from an in utero head position, which causes localized increase in pressure within the muscular compartment contained by the sternocleidomastoid fascia, which, in turn, may lead to focal ischemia, necrosis, and fibrosis of the muscle.[2,12] Heredity may have a role to play in a small percentage of cases, as an increased frequency of sternocleidomastoid tumor has been reported in twins and siblings.[3]

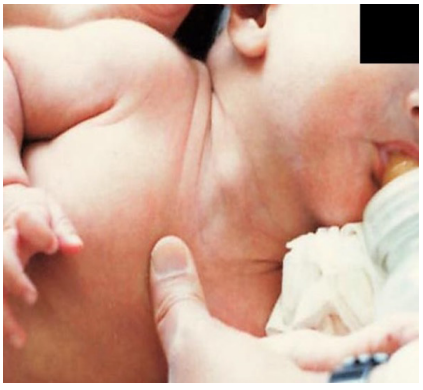

Figure 1. Sternocleidomastoid tumors typically present as a firm, nontender, discrete, spindle-shaped, or fusiform mass within the sternocleidomastoid muscle.

A sternocleidomastoid tumor typically presents between the second to eighth week of life as a firm, nontender, discrete, spindle-shaped, or fusiform mass within the sternocleidomastoid muscle **(Figure 1).**[3,4,13] The mass is not fixed to the skin and is movable in a horizontal direction. The tumor is usually found in the middle or lower portion of the sternocleidomastoid muscle.[14] Both heads of the sternocleidomastoid muscle are often affected. The right sternocleidomastoid muscle is involved in approximately 75% of cases.[10,12,13] At presentation, the size of the lesion usually varies from 1 to 3 cm in diameter.[14] The tumor may increase in size for several weeks, stabilize in size for a few months, and then diminish spontaneously in the majority of cases by 8 months of age.[1,12,15] The condition is typically unilateral.[16] Bilateral cases have rarely been reported.[4,9,15]

The most common complication is torticollis, occurring in 10% to 20% of cas-

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CITATION:
Leung AKC, Barankin B, Lam JM, Leong KF. An atlas of lumps and bumps, part 19. *Consultant*. 2022;62(8):e31-e33. doi:10.25270/con.2022.07.00010

DISCLOSURES:
Dr Leung is the series editor. He was not involved with the handling of this paper, which was sent out for independent external peer review.

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EDITOR'S NOTE:
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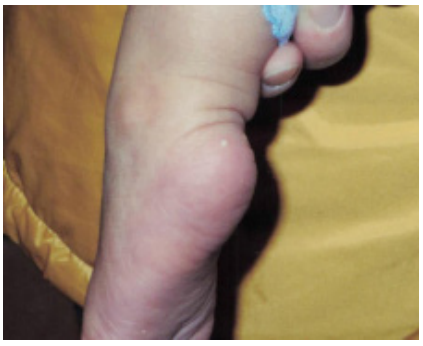

Figure 2. Pedal nodules present as an asymptomatic yellow or white papule or nodule on the infant's heel at the site of heel pricks performed during the neonatal period.

es.[7,11,13,15] Contraction of fibrous tissue within the lesion can lead to shortening of the sternocleidomastoid muscle, thereby pulling the head toward the side of the lesion with a resulting ipsilateral head tilt and contralateral chin deviation.[3] Torticollis is aggravated by the inability of the affected muscle to grow normally and to keep pace with the normal muscle. The degree of torticollis is related to the ratio of the fibrosis to the remaining functional muscle.[3] Uncorrected torticollis may lead to restricted neck movement, plagiocephaly, and facial asymmetry.[2,9,16]

The diagnosis is mainly clinical, suggested by a history of difficult labor, complicated delivery, and birth injury in a significant number of cases and physical findings of a short neck, torticollis, and most importantly, a mass within the sternocleidomastoid muscle that is mobile in the horizontal plane and not affixed to the overlying skin. Usually, no diagnostic test is necessary. Ultrasonography can be used to delineate the spindle-shaped tumor within the sternocleidomastoid muscle and to demonstrate the fibrotic nature of the lesion.[4,6,17]

Pedal Nodule From Heel Prick

Pedal nodules (also known as heel-stick calcinosis cutis) may result from localized skin trauma.[18-21] In infancy, it is often associated with single or multiple heel-prick tests.[18-21] Clinically, the lesion presents as an asymptomatic yellow or white papule or nodule on the infant's heel at the site of heel pricks performed during the neonatal period **(Figure 2)**.[18-22] The papule or nodule typically appears between 4 and 12 months after birth and disappears by extrusion through the skin 14 to 18 months later.[19-21,23]

Occasionally, the lesion may persist into childhood and become symptomatic.[22] A survey of 269 neonates and 189 infants showed an incidence of pedal papules or nodules to be 5.9% in neonates and 39.4% in infants.[24] Lesions can be solitary or multiple. The condition is more common in high-risk infants because of the increased frequency of heel pricks.[22,25,26] The lesion is believed to be an implantation cyst containing calcified epithelial elements.[19-21,26] Alternatively, the lesion may represent dystrophic calcification of the skin following the heel pricks.[18,22]

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