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As all of you know, A National Provider Identifier number (NPI) will be required for all consultations by May of 2007. To prevent possible delays in service and patient inconvenience, please fax your NPI numbers to us at (817) 336-6821.

For your records, these are our NPI numbers:

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NECK MASSES part I

Congenital cysts of the neck are a fascinating group of anomalies which are common but are also commonly confused. Just yesterday I saw in my office a young lady who had been referred for the evaluation of a thyroglossal cyst, but which could be seen at a glance to be a branchial cleft anomaly instead. Both conditions have their explanations in the early embryology of the developing human.

Thyroglossal cysts

The thyroid gland begins developing about day 24 of gestation on the floor of the pharynx in the midline between the 1st and 2nd branchial arches. As the embryo elongates and the tongue grows, the thyroid descends from its location at the base of the tongue. The thyroid remains connected to the tongue by the fibrous thyroglossal duct, and the indentation which develops at the base of the tongue by the downward growth of the thyroid is called the foramen cecum. The thyroid reaches its normal final location in the lower neck by seven weeks of gestational age. The foramen cecum persists as the proximal remnant of the thyroglossal duct at the base of the tongue. A middle or pyramidal lobe of the thyroid persists as the distal remnant of the thyroglossal duct in

about 50% of the population. The path of thyroid migration extends from the base of the tongue through the region of future hyoid bone just above the thyroid cartilage, and down the anterior neck. Rests of thyroid tissue may remain anywhere along the path of migration, and resulting cysts may form anywhere along that path. Less often, a cyst can form within the base of the tongue causing difficulty swallowing. Rarely the thyroid fails to migrate and a lingual thyroid results. This should always be removed as complications are frequent but thyroid replacement is easy and safe.

The typical thyroglossal cyst occurs just anterior to the hyoid bone high in the midline anterior neck. It may remain quiescent for years before suddenly enlarging or becoming infected. It is not unusual for a previously unsuspected mass suddenly to enlarge to marble size or greater and then shrink with time and antibiotics to a tiny but palpable mass. An abscessed thyroglossal cyst should be incised and drained, then resected at least six months later, after the inflammation has resolved. Recurrent infection during the intervening time should be immediately treated with antibiotics.

Years ago, Dr. Sistrunk noted that resecting the center portion of the hyoid bone along with the cyst greatly re-

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duced the risk of recurrence, and the procedure in which both the cyst and the bone are removed bears his name. Recurrence is also common if the cyst had previously been infected, even if the infection had been adequately treated. Removal of an uninfected thyroglossal cyst is generally recommended at the time of diagnosis or as soon thereafter as is reasonable. It is performed as an outpatient procedure and is remarkably well tolerated.

The differential diagnosis of midline upper anterior cervical masses is short. Lymphadenopathy rarely occurs directly in the midline. Epidermal inclusion cysts may occur anywhere on the body, and if one occurs in this location it might be mistaken for a thyroglossal cyst. Ultrasonography is not helpful.

Branchial Cleft Anomalies

The 4th week of gestation is characterized by the appearance of four (later six) branchial arches separated from each other by grooves or clefts. Internally, pharyngeal pouches correspond to the external clefts. The 2nd, 3rd and 4th of these clefts fold inward, forming a sinus which may persist as a branchial cleft cyst. Occasionally, the 2nd cleft may fuse with the 2nd pouch to form a persistent fistula. Such a fistula originates within the tonsillar crypt, extends into the soft tissue of the neck, passes between the internal and external carotid arteries at their bifurcation from the common carotid artery, and exits on the side of the neck just anterior to the mid-point of the sternal head of the sternocleidomastoid muscle. The cutaneous opening may be so inconspicuous that it remains unnoticed for years. A common parental complaint in this situation is that the collar of the child's shirt is always wet, but no source for the dampness can be identified. Close inspection will reveal a tiny opening in the skin, and if watched carefully, a drop of saliva or mucus will eventually appear, confirming the diagnosis.

Both branchial cleft cysts and fistulae should be resected when found because of their potential for becoming infected. These are generally performed as out-patient procedures with little associated morbidity.

A cartilaginous rest is associated with each branchial cleft. Small remnants of branchial cleft cartilage may persist and will be seen over the distal 1/3 of the sternal head of the sternocleidomastoid muscle. These are unsightly but are at no risk of becoming infected. They are generally resected.

Abnormalities of the Preauricular Area

At about the 5th week of gestational age, the 1st and 2nd branchial arches develop small swellings called auricular hillocks. There are three hillocks on each side of the 1st branchial groove. These hillocks develop into the external ear with the 1st branchial arch forming the tragus and the 2nd forming the pinna. Accessory hillocks may result in small preauricular appendages or tags. In the past, these have been removed by simple ligation, but each generally contains a nubbin of cartilage which will persist as a firm mass if not surgically removed with the appendage. The preauricular area heals exceptionally well and visible scarring is rare.

Cysts or pits in the preauricular area may be related to branchial cleft anomalies but may be related to abnormal infolding of ectoderm during formation of the external ear.

These do not communicate with the auditory canal and should be excised when found since they are at risk for continued enlargement and for developing infection.

Torticollis (Fibromatosis colli)

Careful palpation of a mass within the side of the neck of a neonate may reveal it actually to be within the sternocleidomastoid muscle. Occasionally palpation is inconclusive and ultrasonography is necessary to confirm that the mass is truly intra- and not extra-muscular. The dense area of fibrotic tissue within the muscle is more properly termed *fibromatosis colli*; torticollis or "wry neck" refers to the resulting rotation of the child's head. Fibromatosis colli always prevents the involved sternocleidomastoid muscle from relaxing, allowing the infant to rotate his head 90° away from the fibromatosis but not much past the midline toward the affected side. This condition was once thought to be due to damage to the muscle at the time of vaginal delivery, but it actually has its origin prior to birth. No individual has exact bilateral facial symmetry; that is, the right and left sides of any individual's face are not exact mirror images, but a child with untreated fibromatosis colli may have exaggerated dissymmetry with true hemifacial microsomia.

If adequately treated during infancy, fibromatosis colli will generally resolve completely. Treatment consists of positioning and physical therapy delivered at home by the infant's primary caregiver. Several times daily, the infant's head should be rotated toward the side of the fibromatosis and held for several seconds. This is not done forcefully, but just until slight resistance is met. The fibrotic area will slowly relax over several weeks, and range of motion toward both sides will eventually equalize. In addition, the child should always be held, or positioned in a crib, seat or other device, in such a manner that the affected muscle is toward the side on which activity within the room is taking place. As the child's attention is drawn toward the noise or motion taking place, he will naturally rotate his head in that direction, stretching the muscle and providing his own physical therapy. Although the torticollis will generally resolve with exercises and positioning, significant hemifacial microsomia and other associated anomalies will not.

Surgery to divide the muscle is required only when the condition persists past 12-15 months, the affected muscle begins tightening, and plagiocephaly or facial asymmetry begins to worsen.

Rules for Staying Young

Satchel Paige (1906?-1982)

1. Avoid fried meats which angry up the blood.
 2. If your stomach disputes you, lie down and pacify it with cool thoughts.
 3. Keep the juices flowing by jangling around gently as you move.
 4. Go very light on the vices, such as carrying on in society — the social ramble ain't restful.
 5. Avoid running at all times.
 6. And don't look back — something might be gaining on you.
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Disclaimer: All material is intended for informational purposes only and is not intended, and should not be used, to replace medical advice offered by a qualified physician. We are always available and willing to discuss questionable conditions with you and we invite your request for our assistance.