

Facilitator's Guide

Case Presentation

Chief Complaint: "My baby is not latching on well to feed."

History: Male infant born 26 hours ago who has not been able to latch on to his mother's nipple since birth despite help from lactation consultant and multiple attempts. Technique of mom appears good. Baby has been fussy since birth and sleeps for only a small amount of time at once, though total sleep time is good.

Pregnancy History: Mom is a 24 year old Gravida1, Para 1-0-0-1. Borderline low amniotic fluid indexes during third trimester, no work up was required. All pre-natal testing negative. Immunity confirmed for ordinary childhood illnesses.

Birth History: Delivery at 39 weeks 4 days. Spontaneous rupture of membranes occurred prior to hospital admission and spontaneous vaginal delivery occurred within 20 hours. Fetal presentation was occiput posterior. Vaginal delivery was vacuum assisted after 3 hours of active labor. APGAR scores of 8 and 9 at 1 and 5 minutes.

Review of Systems: Skin: mom has noticed no bruises or jaundice, HEENT, Resp: no changes since birth. GI: one black tarry BM since birth. GU: 5 wet diapers since birth. Musc: mom has not noticed any changes in muscle tone since birth

Physical Exam:

Vital signs: Pulse 130, RR 50, Wt: 8 lbs. 10 oz., Length: 21 inches, Head circumference: 13 inches

General: Healthy appearing young male infant in mild distress. Alert and crying.

HEENT: Head demonstrates some deformity in shape, especially about the temporal and occipital regions. There is a localized, circular edematous region of the scalp near the vertex that crosses suture lines. Deep to the superficial edema, there is a firm circumscribed bulge approximately 2 cm in diameter localized to the right parietal bone that does not cross suture lines. Eyes show pupils equal and reactive to light bilaterally. Ears have patent canals bilaterally. Nasal mucosa is pink and moist. Oral mucosa is non-erythematous and without discharge. Poor suck reflex to manual stimulation with gloved finger.

Cardio/Pulm: Heart has regular rate and rhythm. There are no murmurs, gallops, or rubs heard. S1 and S2 heard. Lungs: Clear to auscultation in five fields.

Abd: Soft and nontender in all quadrants. Borborygmi heard. No masses or organomegaly.

Extremities: No edema noted. Clavicles intact. Ortolani and Barlow tests negative. Distal pulses intact +3/4.

Neuro: Babinski's reflex upgoing bilaterally. Strong Moro's reflex. No root. Disorganized suck.

Osteopathic Structural Exam:

There is overlap of temporal bones onto parietal bones bilaterally. There is also overlap of the left parietal bone over the left occiput and overlap of the right occiput over the right parietal bone. The sagittal suture is moderately restricted with reduced motion. The temporal bones are restricted in external rotation bilaterally. There is a right sidebending-rotation pattern and compression at the sphenobasilar synchondrosis. Occipital condylar compression is present bilaterally. The cranial rhythm is slow at 4 fluctuations per minute. There are fascial restrictions around the temporomandibular joint bilaterally. Cervical spine exhibits a generalized right rotational preference. T1-6 demonstrates right rotational preference. There are fascial restrictions in the posterior ribcage localized to the mid thoracic region on the left in close proximity to the rib angles of ribs 4-6. T8-L3 demonstrate a left rotational preference. Restricted diaphragmatic excursion. There is sacral restriction at the right base.

Assessment:

- Be prepared to discuss this at the OMM session. Indicate the primary Medical Diagnosis based upon the international Classification of Diseases (ICD-9). This justifies the Evaluation and Management (E&M) coding portion of the visit.
- List all secondary comorbid and complicating factor diagnoses, in order of importance. Itemize somatic dysfunction diagnosis for each body region treated using OMT. This justifies reimbursement for OMT.
- Be prepared to discuss management of typical comorbid and complicating factors associated with the patient's diagnosis and how management and treatment would be modified with each comorbid and complicating factor.

Section II: Mini-Lecture/Discussion (approximate time 20–30 minutes)

Discussion Questions

Teaching Points

<p>1. Propose an appropriate differential diagnosis / assessment and list your primary diagnosis and any secondary diagnoses.</p> <p>-</p>	<p>Differential Diagnoses:</p> <p>1. Differential diagnoses:</p> <ul style="list-style-type: none"> • Caput Succedaneum • Cranial Somatic Dysfunction • Congenital torticollis • Hypoglycemia • Malformation of the cervical vertebrae • Craniosynostosis • Esophageal obst. Cephalohematoma ruction • Hypotonic neuromuscular diseases <p>Primary Diagnosis: newborn feeding problem Secondary Diagnosis: cephalohematoma, cranial molding or plagiocephaly, caput succedaneum, congenital torticollis Somatic dysfunction related to diagnosis: head, cervical, thoracic, lumbar, sacrum/sacroiliac, rib, abdomen</p>
<p>2. How do you explain the current structural findings in the context of this case?</p> <ul style="list-style-type: none"> • Are any relevant structural findings missing? • What would you do differently? Why? 	<p>Based on the child's positioning during birth, as well as the force applied by the vacuum extractor, the head, neck, spine, and sacral tissues would be involved in potential dysfunction.</p> <p>Cranial molding and other deformations can occur due to compressive forces that are encountered by the fetus in utero or during the birth process. In this case the occiput posterior presentation and subsequent vacuum assisted delivery created a need for more adaptation of the newborn skull.</p>
<p>3. What pathophysiology & functional anatomy knowledge is pertinent for diagnosing/treating this patient</p>	<p>A. Pathophysiology— The caput succedaneum is superficial scalp edema, crosses suture lines, resolves generally within 48 hours of age and is not associated with hyperbilirubinemia.</p> <p>A cephalohematoma is a subperiosteal hematoma of the bones of the skull secondary to shearing of the periosteum over the surface of the</p>

<p>3. continued</p>	<p>bone. It is characterized by a firm bulge deep underneath the scalp that typically does not cross a suture line. This is more common after prolonged labor, with abnormal presentations, (in this case occiput posterior) and after instrument-assisted deliveries. Cephalohematomas resolve spontaneously and can occasionally be a cause of hyperbilirubinemia.</p> <p>B. Functional Anatomy - •A traumatic birth can result in any number of intracranial membranous strains, cranial nerve entrapments, or central nervous system irritation or compression. These mechanical dysfunctions can result in neonatal morbidity related to the function of the affected structure. CN V, VII, IX, X, XI and XII all participate in functional feeding. Dysfunction affecting any of these structures can contribute to dysfunctional suckling and associated feeding difficulties. Improper suckling can result in improper latch, feeding difficulties, dehydration, prolonged jaundice, and other related neonatal morbidity.</p> <p>At birth the newborn occipital bone is in four parts: base, squama, and two lateral condylar parts. The hypoglossal nerve (CN XII) exits the cranium in close proximity to these structures through the hypoglossal canal of the occipital bone bilaterally. CN XII provides motor innervation to the tongue. Intrauterine or intrapartum compression of CN XII can alter the nerve function. The altered nerve function can cause difficulty in tongue movement, altered reflexes, and poor, ineffective suckling.</p>
<p>4. Which 1 or 2 of the aspects below has the greatest influence on the patient complaint?</p> <ul style="list-style-type: none"> • Pain • Fluid congestion • Hyper-sympathetic influence • Parasympathetic influence 	<p>Painful latch puts mom and baby at risk of terminating breast feeding.</p>
<p>5. Devise an appropriate treatment plan based on musculoskeletal components involved in the patient complaint</p>	<p>Goals for osteopathic manipulative management—includes:</p> <ul style="list-style-type: none"> • Release cranial suture restrictions • Reduce cranial somatic dysfunction and therefore reduce neurological irritation or nerve compression • Maximize ribcage motion • Normalize sympathetic/parasympathetic tone • Improve lymphatics to assist in resolution of hematomas • Address acute somatic dysfunction • Support homeostasis • Minimize fascial strain patterns <p>The treatment plan could include:</p> <ol style="list-style-type: none"> 1. Direct Diaphragm release 2. Condylar decompression 3. Reduction of specific suture restrictions using gentle, firm direct action. 4. Frontal and/or Parietal lifts

	<p>5. Cervical, Thoracic inlet, Thoracic, Rib and Lumbar techniques: Indirect technique of choice</p> <p>6. Rib raising</p> <p>7. Sacral techniques: gentle lumbosacral and sacroiliac decompression</p> <p>8. Myofascial release of non-cranial fascial strains: Diaphragm, OA, specific cranial suture restrictions, thoracic inlet, sacrum, fascial strains</p> <p>9. Gentle techniques, focused on high yield regions should be used.</p> <p>Care should be taken with manipulation in the region of the cephalohematoma and adjacent or related structures in order to minimize the chance of hematoma expansion.</p>
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Procedure Services: Osteopathic Manipulative Treatment							
		Code	Description				
		98925	Manipulation, 1-2 areas				
		98926	Manipulation, 3-4 areas				
		98927	Manipulation, 5-6 areas				
x			98928	Manipulation, 7-8 areas			
		98929	Manipulation, 9-10 areas				
CPT Diagnostic Codes: Rank in order of Importance							
Diagnosis			Somatic Dysfunction				
Code	Description		Code	Description		Code	Description
		x	739.0	Head		739.5	Hip/Pelvis
		x	739.1	Cervical		739.6	Lower Extremity
		x	739.2	Thoracic		739.7	Upper Extremity
		x	739.3	Lumbar	x	739.8	Rib
		x	739.4	Sacrum/Sacroiliac	x	739.9	Abdomen