

Facilitator's Guide

Section I: OMM Case Presentation. Prior to the next OMM session Residents should read the case below and be prepared to discuss the questions in Section II

Case Presentation

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

Patient History: A 26-hour-old, term, male infant has been having difficulty latching on to his mother's nipple for breastfeeding since birth. There has been neither any improvement nor worsening of the difficulty since it began. The lactation consultant has been assisting the mother and giving her tips for breastfeeding. However, lactation consultant states that the mother is doing well with her techniques. The infant has been very fussy since birth, especially while trying to latch on to his mother's nipple. The child has had no problems with overall amount of sleep; however, he does not stay asleep for very long at one time.

Maternal Pregnancy History: 24 year old Gravida1, Para 1-0-0-1. Pregnancy was a relatively uncomplicated course. Borderline low amniotic fluid indexes were reported on ultrasound obtained during third trimester, but no work up was required. Group B Strep negative, Hepatitis B negative, HIV negative. No history of past sexually transmitted infections and screen for sexually transmitted infections was 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.

Family History:

Social History:

Trauma History:

Allergies:

Lab Tests & Results:

Meds: None

PMH: The infant's mother has a history of chronic sinusitis and the infant's father has a history of high blood pressure. The child's maternal grandparents both have a history of hypertension and Type II Diabetes Mellitus. The infant's paternal grandfather is deceased of lung cancer. The infant's paternal grandmother has a history of cerebral aneurysm.

PSH: None

Review of Systems

Skin: Mother denies new bruises, cyanosis, or jaundice.

HEENT: Mother denies any gross abnormalities or changes since birth.

Respiratory: Mother denies any change in breathing.

GI: Mother admits changing one black, tarry dirty diaper since birth.

GU: Mother admits changing 5 wet diapers since birth.

Musculoskeletal: Mother denies any change 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 bone 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 and bounding +3/4.

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

OMM Focused 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 on the left. T8-L3 demonstrates a left rotational preference. Examination of the linea alba reveals 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 co-morbid 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: Focus of the Case (approximate time 20–30 minutes)

Discussion Questions

Teaching Points

<p>1. Propose an appropriate differential diagnosis / assessment</p>	<p>Differential Diagnoses:</p> <ol style="list-style-type: none"> 1. Cephalohematoma 2. Caput Succedaneum 3. Cranial Somatic Dysfunction 4. Congenital torticollis 5. Hypoglycemia 6. Malformation of the cervical vertebrae 7. Craniosynostosis 8. Esophageal obstruction <p>Hypotonic neuromuscular diseases</p>
<p>2. What is your final diagnosis?</p>	<p>Primary Diagnosis: newborn feeding problem Secondary Diagnosis: cephalohematoma, cranial molding or plagiocephaly, caput succedaneum, congenital torticollis</p> <p>Somatic dysfunction related to diagnosis: head, cervical, thoracic, lumbar, sacrum/sacroiliac, rib, abdomen</p>
<p>3. 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>4. 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 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</p>

4. continued...	<p>suckling can result in improper latch, feeding difficulties, dehydration, prolonged jaundice, and other related neonatal morbidity.</p> <ul style="list-style-type: none"> • Congenital torticollis can be the result of a functional spinoaccessory (CN XI) nerve irritation from a birth strain. Treatment of the structures around the nerve as it exits the newborn skull will resolve the nerve irritation and the hypertonicity of the sternocleidomastoid that causes the torticollis. <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>
5. What will be your highest yield regions?	
6. How does previous trauma influence these regions?	

<p>7. 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 	<ul style="list-style-type: none"> • Hyper-sympathetic influence • Parasympathetic influence • Biomechanical factors • Fluid Congestion <p>Painful latch puts mom and baby at risk of terminating breast feeding</p>
8. What are the acute or chronic aspects?	<p>Acute: Chronic:</p>
9. Devise an appropriate treatment plan based on musculoskeletal components involved in the patient complaint	<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>9. continued....</p>	<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>
<p>10. How soon would you see the patient for OMM follow-up?</p>	
<p>11. What are the outpatient, inpatient, and emergency room considerations?</p>	<p>Be aware that this neonate is at risk of developing jaundice as the cephalohematoma resolves. This will become more of an issue around the time of discharge. The lethargy associated with the jaundice would make nursing more difficult. If lethargic and jaundiced, treatment involves adequate nutrition to help clear meconium and possibly bili blankets, etc.</p>
<p>12. How are you going to talk to your patient about their complaint and your treatment?</p>	
<p>13. How will you communicate your findings, diagnosis, and rationale for OMM treatment to your preceptor?</p>	
<p>14. What coding and billing information for evaluation and management and procedural services will you generate?</p>	
<p>15. How would you record your encounter and OMT on your patient care logs?</p> <p>(See OMT Procedure Services Chart pg 6)</p>	<p>Enter patient data, diagnosis date, and any special comments.</p>

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

16. What is the Evidence Base?

- Graham JM. Smith's Recognizable Patterns of Human Deformation. 2nd Ed. Philadelphia: W.B. Saunders Company; 1988.
 - Jones MD. "Birth Related Injury, Including Perinatal Asphyxia." Rudolph's Pediatrics. 21st Ed. New York: The McGraw-Hill Companies; 2002.
- Specifically Osteopathic Considerations:
- Centers S et al. General Pediatrics. In: Ward RC, ed. Foundations for Osteopathic Medicine. 2nd Ed. Philadelphia: Lippincott Williams & Wilkins; 2003:305-326.
 - Sergueef N and Nelson KE. The Pediatric Patient. Found in: Somatic Dysfunction in Osteopathic Family Medicine. Nelson KE, Ed. 2007. Lippincott Williams and Wilkins. Baltimore. Pgs. 87-104.
 - Fraval MMPR. A pilot study: osteopathic treatment of infants with a sucking dysfunction. AAO Journal 1998; 8(2):25-33.

Search for the best evidence references:

An appraisal of the osteopathic literature is critical to ensure the osteopathic paradigm is foremost in the philosophical application of information to patient care. Search of relevant and associated data from the osteopathic literature:

OstMed-Dr (<http://www.ostmed-dr.com:8080/vital/access/manager/Index>)

Other literature bases (systems or synopsis engines):

- Poems (www.info poems.com)
- Family Practice Inquiry Network (www.fpin.org)
- PubMed
- Ovid
 - Google Scholar

Section III: Workshop/Lab (approximate time 60 minutes)

Facilitator demonstrates the key treatment techniques.

1. Participants divide into groups at the table
2. At each table, discuss and practice the appropriate palpatory diagnosis for this patient
3. Facilitator demonstrates the key treatment techniques:
4. Participants should practice the following techniques on each other:
 - Direct Diaphragm release
 - Condylar decompression
 - Reduction of specific suture restrictions using gentle, firm direct action.
 - Frontal and/or Parietal lifts
 - Cervical, Thoracic inlet, Thoracic, Rib and Lumbar techniques: Indirect technique of choice
 - Rib raising
 - Sacral techniques: gentle lumbosacral and sacroiliac decompression
 - Myofascial release of non-cranial fascial strains: Diaphragm, OA, specific cranial suture restrictions, thoracic inlet, sacrum, fascial strains
5. At each table, while the techniques are being practiced:
 - a. Identify and practice good body mechanics for the physician and patient in treatment
 - b. Discuss the treatment plan
 - c. Discuss what palpatory findings should change on the patient after OMM treatment

6. Documentation

Residents demonstrate an appropriate documentation of this case including findings and treatment here...

Section IV: Final Wrap-up and Questions/Answers