Using the Bowtech technique to assist with issues affecting breastfeeding

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Aim The intention of this research assignment is to explore the use of Bowtech Bowen technique to assist with some common issues physically affecting breastfeeding that may benefit from a collaborative approach and provide holistic treatment. I will do this through

1. Demonstrate how parents have found Bowen helpful through challenges in breastfeeding their babies through brief case histories by example.
2. The possible mechanism for Bowtech Bowen work on a selection of key conditions impacting on a breastfeeding relationship
3. Show the potential and need for research in this area to advance Bowen as a clear evidence based option for mothers and babies

Design Review of current relevant literature to link, understand and explain the effectiveness of Bowtech Technique in helping resolve physical issues compromising breastfeeding. Finally brief illustrative case studies in assisting and supporting breastfeeding mothers and babies as a lactation consultant and Bowen therapist

Setting Authors private practice lactation consultancy in Roma, SW Qld over 9 year period referring to local Bowen therapist and authors own practice as a Bowen therapist.

Ethical Considerations- The Bowen technique was explained briefly to parents with demonstration of “Baby Bowen” (BB) of any procedures to be used on a mannequin. They indicated their verbal consent by making appointment to have BB performed over a series of treatments.
Parents also signed a consent form agreeing to participate in the research project by provision of data, their experiences and photographs

The Bowen technique -history, philosophical beliefs, values and evolution of treatment

History & Values *"The Bowen technique is a dynamic system of muscle and connective tissue therapy that was developed by the late Tom Bowen in Geelong, Australia .Mr Bowen became interested in ways to alleviate human suffering and began to notice that certain moves on the body had particular effects"* (Rentsch 2007 P viii)
In the 1970's he was seeing large numbers of clients due to the minimal number of 1-3 treatments required and also offered *"free clinics for children, people with disabilities and community service workers "*(Rentsch 2007 P viii)

Bowen therapy evolution In 1974 Mr. Bowen agreed to have Oswald Rentsch observe his work with Mr. Rentsch meticulously documenting the technique with the assistance of Mr. Bowens secretary Mr. Rentsch and his wife Elaine began to offer the treatment in their own clinic in Victoria in 1976 and honored their commitment to Mr. Bowen to teach the technique following his death in 1986. In 1987 they founded the Bowen therapy Academy of Australia and the Bowen technique was named Bowtech. Practitioners must meet the accredited training and ongoing practice commitments required by Bowtech to be entitled to practice under the name of Bowtech.
Philosophy & treatment physiology Tom Bowen's philosophy in creating this successful technique appears to be in using a keen eye to observe, listen and respond to the clients posture ,muscle tension and conditions .Mr. Bowen would then perform minimal Bowen moves and trusting in the body's innate self healing ability. Mr. Bowen & the Bowen community widely hold the "less is more approach " in performing effective Bowen treatment. (Wilks 2007, P4)
Rentsch (2007 pvii) states *"Rather than focusing on a single complaint, the Bowen technique addresses the entire body, by restoring balance via the autonomic nervous system(ANS) . The ANS controls over 80 % of bodily functions and is very susceptible to external stressors "*

Bowen uses gentle stretch and rolling movements at specific points throughout the body usually muscles, tendons, ligaments, nerves and body fascia. *Rentsch (2007 pviii)* that "In addition to activating the ANS. Bowtech moves and procedures may reset the body to heal itself by activating through the nervous and endocrine systems among others, the following mechanisms "stretch reflex, joint proprioreceptors, fascia, acupressure points and meridians, spinal reflexes, stimulating immune & lymphatic system, Harmonic vibration or resonance model, lymphatics and detoxification *Rentsch (2007 p ix)*

The overall effect on the body is to

1. Rebalance & realign the body > improved posture and mobility
2. Relaxes , calms & restores balance to the nervous system allowing healing & recovery to begin or continue
3. Stimulating body energy , circulation and detoxification

Although any Bowen can be used on babies it is usual to use only a brief but particular set of moves initially, known as Baby Bowen. Baby Bowen focuses around the posterior and anterior thoracic area due to the uppermost centre of gravity in the baby, the less developed fascial system and their whole body responsiveness to these minimal moves. Extra procedures are added as and when appropriate within the comfort level of the baby to further address specific issues.

Literature Review

A search of the Cochrane database, Google scholar, Pub med, International Breastfeeding Journal did not yield any peer reviewed research available specifically relating to use of Bowtech technique for issues affecting breastfeeding chosen by the author – Gastric reflux, Colic, Torticollis and breastfeeding coordination.

There is some anecdotal information verbal and printed (Mavis Bunt, Sandra Gustafson, Jane Murphy) .Generally there is a relative lack of documented information to guide the Bowen practitioner specifically relating to working with babies except the invaluable text by John Wilks “The Inside Story”

Literature used in this research project correlates and explores common threads in the two topics of lactation and Bowen.

Demographics The use of Bowen technique has general acceptance amongst health practitioners in the Roma district and is used by a diverse community cohort ranging newborn to elderly including graziers, families, young sports people, professionals, health care and community workers. Until recently there has been only one full time practitioner with high demand.

Other treatment options used by the population having Bowen technique are the chiropractor, massage therapist, physiotherapist. Parents generally sought GP advice, Chiropractor or Physiotherapist for their babies. The town does not have a Naturopath, Craniosacral therapist or Osteopath

Background

Despite the importance of breastfeeding to a child ‘s overall health and development mothers often find themselves facing significant challenges establishing breastfeeding due to the infants makeup, birth adjustment or environmental effects such as birth trauma ,assisted birth, food allergies. These challenges may present as difficulty with breast attachment & positioning, colic, gastric reflux, irritable baby, poor weight gain, nipple pain and consequent milk supply issues.

Internationally Board Certified Lactation Consultants (IBCLC) are allied health professionals with gold standard specialist qualification in lactation knowledge and management skills to assist mothers .They facilitate breastfeeding classes, breastfeeding establishment, assess complex breastfeeding challenges and refer to other health professionals as appropriate to attain the best possible outcome.

As this is a large and specialised subject what follows is a brief insight and exploration of the conditions of Reflux, Colic and Torticollis that Bowen is used for by Roma Bowtech practitioners and associated feeding implications. I will then hypothesize the mechanism by which Bowen may work on these conditions to assist the breastfeeding relationship giving case examples.

Infant distress, Colic and Reflux

Colic has varying definitions and is often used as a blanket term to describe a baby's distress. Riordan & Wambach (2010 P 864) state it is "*a syndrome in early infancy characterised by episodic loud crying, apparent abdominal pain (legs drawn up and rigid abdomen) and irritability.*"The Churchill Livingstone Nurses Dictionary (1978 P71) as Greek for "*suffering in the colon*" and *"severe pain resulting from periodic spasm in an abdominal organ"* and Vartabedian (2007 P287) as "*a five letter word used by physicians when they don't know why a baby is crying "*

Causes of colic are still debated but are thought primarily related to food protein hypersensitivity or allergy with parental expectations, family dynamics and smoking also suggested. Riordan & Wambach (2010 P275).
Riordan & Wambach (2010 P 274) note that before an assessment of colic is made, all other causes of crying should be investigated and ruled out, especially hunger, illness and injury, and lack of carrying and touch**.**
Treatment usually involves elimination of possible above causes, supportive measures to manage crying, elimination or reduction of other contributing factors.

Gastroesophageal Reflux is considered to be a normal process in babies where stomach contents may rise above the sphincter at the oesophagus base but may not cause any distress. For some babies it can be distressing and may become Gastroesophageal Reflux Disease (GERD) as defined simply by Vartabedian (2007 P28) as "*the complications and problems arising from the passage of stomach material up and out of the stomach where it doesn't belong."* A baby in distress and having episodes of crying or screaming may be diagnosed as suffering with colic or reflux.
Causes of reflux may include breast milk oversupply, immature lower oesophageal sphincter, slower gut motility, poor feeding technique and cows milk allergy. Unsettled behaviour can also be caused solely by food protein hypersensitivity or allergy. Vartabedian (2007 P28), Riordan & Wambach (2010 P 339)
Another possible contributor to the distressed/ unsettled baby can perhaps be found in the observations of John Wilks who notes that in some babies "the *first part of the Moro reflex was dominant with strong activation of Sympathetic nervous system and generally hyper aroused state"*
He went on to observe its occurrence in babies "*who had experienced traumatic births or, in particular Caesarean deliveries the first part of this reflex will be dominant and express itself at the slightest upset"* Wilks 2007 (P 169)

For the breastfeeding mother infant distress whatever its cause can make it difficult for her baby to feed or attach well and she may also have difficulty with bonding, milk supply, sore nipples and breast drainage problems**.**

Traditional treatment for symptomatic reflux may include medications to decrease stomach acidity or increase gut motility, upright positioning for 20-30 minutes after feeds, smaller more frequent feeds and in serious cases, surgery. Some health professionals including lactation consultants will suggest consideration of elimination of dietary contributors after trying basic management measures. Dietician referral

may be required to guide careful elimination diet and ongoing maintenance without compromising maternal diet.

Bowtech treatment for an unsettled baby, colic or reflux would generally be "Baby Bowen" with addition of extra procedures if required as treatment progresses.
John Wilks suggested unsettled babies may also benefit from moves such as "*Coccyx, Kidney or TMJ procedure*" Wilks 2007 (P 160)

Bowen affects the Vagus nerve and shifts the body from the sympathetic response discussed earlier to a parasympathetic response. The Vagus nerve affects digestive function including stomach, small intestine and some of the large intestine, heart rate, respiration, liver and kidney function Wilks 2007 (P 142).
A baby is better able to focus on breastfeeding when its body is functioning in a balanced way and not under stress or causing distraction with pain.

Torticollis

Definition It is thought that congenital muscular torticollis (CMT) is caused by intrauterine restriction and or vascular injury to one Sternocleidomastoid muscle (SCM) before or during birth. Watson Genna 2013 (P 236) .
There is usually a preference to turn the neck to one side and there may also be associated facial asymmetry including the eyes, ears and mandible (evident in gum lines). Watson Genna 2013 (P 236) described the appearance in detail "
A contracted SCM muscle causes the head to be rotated to the contralateral (opposite) side and tilted to the ipsilateral (same) side. There are associated facial asymmetries, including changes in eye height and size, unequal mandibular "
Smith 2010 (P75) further indicated that torticollis may be caused by "*shortening or spasm of the (SCM), or associated with "nerve entrapment from cranial asymmetry*"
Up to 10 % of babies are thought to have a preference for one side (Wall & Glass, R (2006)) with CMT estimated to occur in 1 in 300 births (Scott Freed, Coulter-O'Berry 2006)

Effects In my experience and that of other IBCLC's, torticollis may cause nipple pain and breastfeeding attachment difficulty with mandibular asymmetry and body positioning difficulty due to the baby's side preference. CMT can also cause problems with adequate breast drainage, this can subsequently leading to blocked ducts and or milk supply issue. Torticollis breastfeeding issues are further confirmed by a well known paper on Torticollis and associated mandibular asymmetry by Wall and Glass, 2006
Additionally if CMT is left untreated "progressive fibrosis (replacement of muscle tissue with inelastic fibrous tissue) may occur "(Watson Genna 2013 (P 236) plagiocephaly (flattening & asymmetry of skull) is associated with up to 90% of CMT cases

Traditional treatment - Current treatment teaches parents varied carrying ,sleeping and floor positioning and to perform stretching exercises early under guidance of a therapist (usually physiotherapist) .Keys to success were commencement of early treatment, parental motivation to attend regular physio and accurately perform stretching exercises is required (Scott Freed & Coulter-O'Berry 2006, P6. Wakista &Ranchagoda 2003) Persistent cases may require surgery, botulinum toxin injection

and cranial orthoses (helmet) if associated with plagiocephaly. (Genna 2013 (P 236), Scott Freed, Coulter-O'Berry 2006)

Bowen treatment– Baby Bowen initially with gradual addition of BRM3 and TMJ if required. Work over the SCM and Trapezius through Neck and TMJ moves.
The SCM & Trapezius are innervated by the spinal accessory nerve and cervical nerves C2, C3 and C4. Torticollis resolution using Bowen has been observed by myself usually within 1-3 visits and occasional cases requiring up to 6 visits. Some parents returned for a "top up "treatment when they noted sudden return of baby neck side preference. Scott Freed & Coulter O'Berry (2004, P6) also noted that torticollis posture could regress during periods of growth as the involved side may not grow at the same rate as the uninvolved side, creating a risk of return of contracture. Periods of illness, teething and acquisition of new motor skills could also cause regression.

Breastfeeding Suck, Swallow, Breathe coordination

Bowtech work done around the head and neck may also assist the mechanics of breastfeeding through work done around the neck and the upper respiratory / TMJ area.

During a breastfeed a baby must coordinate and maintain stability of his breathing, swallowing and suckling efforts. A number of external factors will assist his ability and comfort such as his body support and good wide attachment while at the breast. The impact of the birth process and any assistance required may mean he has extra challenges and distractions in feed coordination that may benefit from the support of body work.
It is helpful to understand some of the relevant nerves involved in the feed coordination process, potentially any misalignment or trauma to the head or neck could disrupt this. The following is drawn from Smith (2013, P64)
Three Cranial nerves and the jugular vein pass through the Jugular foramen, the Glossopharyngeal nerve (IX) Vagus nerve (X) and Spinal accessory nerve (XI) . In addition nearby is the Hypoglossal nerve between occipital bone segments.
Their functions are

1. Glossopharyngeal nerve – sensory fibres in the posterior palate and tongue, which among other functions triggers the gag response
2. Vagus Nerve –sensory fibres to the heart, lungs, trachea, bronchi, larynx, pharynx, gastrointestinal(GI) l tract and external ear and motor fibres to the larynx, heart, lungs, trachea, liver and gastrointestinal tract .
3. Spinal accessory nerve – innervates the trapezius and sternocleidomastoid (SCM)muscles which stabilises the infants head and maintains airway patency
4. Hypoglossal nerve – controls tongue movement including patterns necessary for latching and sucking.
5. Facial Nerve (CN VII)- Has sensory fibres in the palate and distal two thirds of the tongue and motor fibres controlling fascial muscles, cheeks ,lips and jaw . Damage to this nerve can affect the infants ability to sense and respond to the breast near his lips to begin feeding or within his mouth to use the tongue to assist breastfeeding .

6. Trigeminal nerve (CN V)- contains sensory fibres of the palate, tongue, lower jaw and nose. Motor fibres trigger muscles responsible for jaw, opening, closing and suckling. This nerve may be damaged during forceps delivery and may cause coordination issues through impaired response to sensory respiration triggers and effective function of the mandible in feeding

Smith (2013, P65) comments that " *Babies with poor suck may have cranial, postural, and or jaw asymmetry" and that Asymmetry in any part of the infants body, especially to the head and neck, may be one indication of significant abnormalities that contribute to poor suck ":*

Smith (2013,P64) states that "*If the jugular foramen is disrupted or misaligned by mechanical forces during instrument assisted birth, then altered function of the jugular vein and the cranial nerves passing through the foramen may adversely affect suck-swallow-breathe and comfortable coordinated breastfeeding*".
Disruption of the cranial base is a potential effect of caesarean birth through lifting the infant over the condylar segments of the skull and may cause "*disruption of the occipital segments could lead to nerve entrapment of the hypoglossal nerve which in turn could cause or contribute to ineffective, mispatterned and or disorganised contraction patterns in the tongue muscle group "Smith* (2013 P 64), Smith (2010 P76)

How might Bowen help?

This research project looks at the contribution that Bowen may make towards improving colic, reflux, torticollis and feeding difficulties through possible affect on nerves affecting digestive and breast feeding movements.
Bowen technique treatment of infant distress, colic, reflux, torticollis or feeding coordination difficulties will obviously not always be the answer because of the complexity of causes. Parents appreciate being able to choose the treatment they are comfortable with; Bowen is an obvious choice with no known risks of harm to the baby and benefits on so many levels .Bowen therapists do not diagnose and must make referral for investigation with the therapist's role supportive, gentle and following the baby's lead .

Success and relief may lie in Bowen's ability to restore balance to a baby's nervous and fascial system prompting gentle body rebalance and restoration of normal homeostasis. Wilks 2007 (P 169) noted that primitive reflexes that are under active, over active or failing to inhibit might demonstrate a nervous system imbalance.
He observed that an over expressed Moro reflex will tell us that the baby's sympathetic nervous system is generally overactive and would benefit from specific Bowtech work.
Physical balance may also be achieved on muscles and nerves causing discomfort and also through the whole of body effects through the fascia (living matrix). The fascia is a web like network with a communication capacity exceeding that of the nervous system as well as housing tissue memory of injury /trauma."*Bowen moves are able to stimulate the body's repair system by sending electrical impulses through*

the living matrix, *releasing the signature of the trauma and restoring systemic balance."* Border College Diploma Module 8 handbook 2011 P 17-21

Bowen work including Baby Bowen, neck moves and TMJ work has a profound effect not just on the specific issues examined , but also on the whole body including the nervous system and fascia holding trauma .Bowen then has much to offer for babies in assisting birth recovery and addressing body imbalances.
Research evidences that aside of birth itself, Infant distress, stress and breastfeeding ability in the early postnatal period have other relationships such as possible side effects of fast or slow birth, early mother and baby separation (Smith, Kroger 2010 P 195), ongoing birth recovery impact of birth interventions including Caesarean, forceps and vacuum delivery) facial asymmetry and torticollis (Smith, Kroger 2010 P 177,178, 179).
The potential effect of forceps delivery is discussed by (Wilks 2007, P163) where he states that the nerves most affected by forceps are the Vagus, Spinal accessory and Glossopharyngeal. *"The effect of this might be to cause problems with digestion, hypertonus of the neck, neck restriction (torticollis quite common) or feeding problems "*

Case 1) ? Caput or Cephalhaematoma
Caput is defined as a collection of blood & serum due to pressure impeding venous return causing congestion and oedema. Caput is considered to resolve within 36 hrs by slowly decreasing in size
Cephalhaematoma is defined as a collection of blood under the periosteum caused by periosteum separating from bone during birth; Cephalhaematoma may initially increase in size before taking some weeks to resolve. (Bennett, Brown 1989, P57-571) "Smith& Kroger 2010 (P72) state that Cephalhaematoma is a well known risk factor for posterior deformational plagiocephaly.

History -Large area of swelling over firstborn baby's scalp still evident at lactation consult on Day 16, mum was told was due to pressure of the head on the cervix before birth . This had a fluid like feeling without a bruised appearance and over a semi defined area. Mum was expressing as baby reluctant to open jaw for attachment with breast refusal, crying, irritability and disorganised rooting reflex evident .On assessment the gumline and jaw line were asymmetrical. The baby had a hyperactive gag reflex preventing suck assessment but no tongue tie was evident in appearance. Breast attachment achieved through prone skin to skin contact with her mother. The stresses associated with baby's distress took its toll with mum weaning at 4 weeks due to difficulty maintaining supply having expressed since birth.
Mother advised by Paediatrician that resolution of the swelling would take twelve months so she decided to try Bowen to resolve its appearance and baby breast attachment.
Progress over 5 visits photographed with mother very happy with treatment in particular physical appearance. Bowen occurred over a four week period with dramatic resolution in the first week
Visit 1 –Baby Bowen & TMJ cross only due to breast attachment difficulty
Visit 2 – Baby Bowen & TMJ cross
Visit 3 -Baby Bowen & BRM3 1-4 (discontinued as unsettled)
Visit 4- Baby Bowen, BRM3, TMJ, Bursitis moves around site

Visit 5- Baby reviewed at 3.5 months old, no evidence of posterior cranial asymmetry.
Mum reports baby neck preference to turn right, head tilt to left observed by therapist .Slight facial asymmetry remaining lower gumline and evident in jaw & facial features- eyes & ears Neck rotation – Left 65 degrees, Right – 80 degrees. No previous Torticollis noted – treatment commenced for this today
(Treatment- Baby Bowen, BRM3, TMJ)

Case 1


15.6.12 Treatment 1 15.6.12


4.7.12 Treatment 4 4.7.12

21.9.12 Treatment 5

Case 2) Torticollis, reflux and tongue tie

Visit 1- Left side turning preference, right head tilt. 10 wk old with colic/ ? Reflux (Treatment- Baby Bowen (BB)

Visit 2- 6 days later no side preference, reflux episodes-screaming, arching, breast refusal. Significant tongue tie present (Treatment BB, BRM3)

Visit 3- 6 days later. Mum states baby much more settled, crying less, breastfeeding and behaviour improved (Treatment, BB , BRM3, TMJ)

Visit 4- 44 days later, Increasing reflux 2/52, Tongue tie clipped 3/52, mum states babies left side preference suddenly returned (Treatment – BB, BRM3, TMJ)

Visit 5- 7 days later, Mum states decreased reflux, more settled and that side preference had "gone". On assessment only slight right h tilt evident
(Treatment -BB & Gall procedure, BRM 3, TMJ)

Case 3) Torticollis

Forceps delivery via Caesarean weekly visits visit 1 -6 then fortnightly

Visit 1 – 5 week old boy Left side preference, right head tilt unable to rotate neck beyond 0 degrees to right (Treatment- BB), Moves 5 & 6)

Visit 2 –.Advised tummy time, alternate head positioning when carrying and encourage turning to right side Referral to Child health and Physio for assessment (Treatment - BB, BRM3)

Visit 3 –Physio happy with progress, for review in 1 month. (Treatment - Baby Bowen, BRM3, TMJ)

Visit 4 - Head shape much improved, able to move head 20 degrees to right (Treatment - BB , BRM3, TMJ)

Visit 5 – 10 weeks old, able & more willing to turn to right. No lump over SCM but mum states present at times. Head tilt significantly reduced (Treatment - BB, BRM3, TMJ)

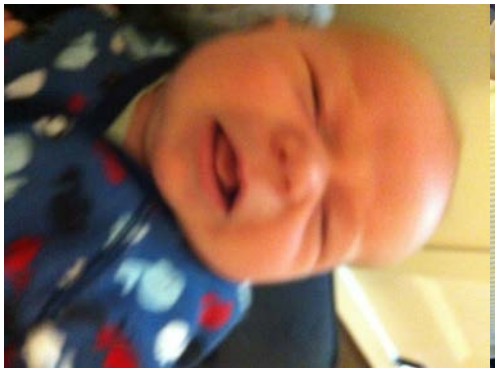
Visit 6- Mum states he is gaining well and very settled now. Freely moving head side to side with neck rotation 45 degrees. (Treatment - BB, BRM3)

Visit 7 – Three weeks since last visit. Neck rotation to right now 55-60 degrees. Still preferring left side at times with right head tilt. (Treatment - BB, BRM3, Pelvic, Psoas)

Visit 8 –Three weeks since last visit, now 4 months old. Neck Rotation Right – 60-65 degrees, Left – 75 degrees. No side preference evident, marginal head tilt, dramatic improvement since last visit.

Posterior photo shows change in head resting position

Case 3




Visit 1 13.7.12 Visit 4 26.7.12


Visit 5 3.8.12 Showing what he can do


Visit 7 31.8.12 Visit 8 21.9.12


Visit 8 21.9.12 Visit 8 - Bald patch on preferred side

Conclusion

The Bowtech technique has been useful for lactation clients presenting with a variety of issues in addressing physical factors impacting on breastfeeding continuation beyond the scope of specialist lactation management

The Bowtech technique is a gentle and caring compliment to holistically supporting a breastfeeding mother and baby through issues that can't be corrected by lactation management alone. The lactation consultant is skilled at maintaing lactation until the physical issue can be resolved by the IBCLC or other therapists; the Bowen therapist should consider referral to an IBCLC to collaborate in preserving the breastfeeding relationship.

The use of Bowen therapy was also positive in enabling the bonding and attachment process to continue when previously infant distress or feeding difficulties had meant t uncomfortable breastfeeding and enjoyment of her baby.

To continue advancing Bowtech's place in the contemporary field of complementary therapies there is real scope and need for practitioners to document, perform case studies and to seek to build the evidence base of the use of Bowen in Babies

Experience and satisfaction with Bowen

A high level of satisfaction and appreciation amongst lactation clients of Bowen therapy as an option when conventional medical treatment did not suit , was not available or could not assist **.**

Many clients have continued to use Bowtech for their children, self and family and also referred mothers with similar issues. There is an acceptance and recognition generally and within the medical community of Bowen as a positive client option

References

Client records

Smith.Kroeger,M. 2010 *Impact of Birthing Practices on Breastfeeding*, Second edition, Jones and Bartlett Publishers ,USA

Watson Genna, C. 2008, *Supporting Sucking Skills in Breastfeeding Infants*, First edition, Jones and Bartlett Publishers, USA

Wilks, J. *The Bowen Technique the Inside Story*, 2007, CYMA Ltd , Dorset, UK

Riordan, J and Wambach, K. 2010 *Breastfeeding and Human Lactation*, Fourth Edition Sudbury, Massachusetts

Vartabedian B 2007 *Colic Solved*, Ballantine Books, United States

Border College of Natural Therapies June 2010 -Diploma of Specialised Bowen therapy Module 8 handbook

Wakista,S& Ranchagoda, G 2004 Intensive physiotherapeutic management of congenital muscular torticollis. Downloaded 2.8.12
http://www.srilankacollegeofpaediatricians.com/pubs/Microsoft%20Word%20-%20Original%20Article%20Intensive%20physiotherapeutic%20management%20of%20congenital%20muscular%20torticollis.pdf

Emery C. Determinants of treatment duration for congenital muscular torticollis. *Phys Ther* 1994;74:921–929. www.physther.org

Scott Freed,S & Coulter-O'Berry, C *Identification and treatment of congenital muscular torticollis in infants Journal of Prosthetics and Orthotics 2004:Vol16, No.4S, P18*
Identification and Treatment of Congenital Muscular Torticollis in Infants
http://www.oandp.org/jpo/library/2004_04S_018.asp

Wall,V & Glass, R (2006) Mandibular asymmetry and breastfeeding problems: Experience from 11 cases . Journal of Human Lactation, 22(3) 328-334.
V.Ruth Bennett, R& Brown, L, 1989, 11th edition *Myles Textbook for Midwives*, Churchill Livingstone, Edinborough