

A 9 YEAR OLD WITH HEADACHE AND CLUMSINESS: A QUESTION OF 'WHAT NEXT?'

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Abstract: This ongoing case discusses a 9yo female patient who presented differently to usual; she was known since birth to the chiropractor. The parent's report provided valuable data that was not clinically evident. The recommendations to collimate a plain-film radiograph of the cervical spine to exclude the skull were over-ridden and produced a higher clinical yield with information that led to the child being treated and then referred for further investigation. The specific learning outcome of this report relates to the value of practitioner experience and patient, including parental, input as powerful elements in evidence-based practice.

Indexing Terms: Upper Cervical, headache, copper beaten skull, chiropractic adjustment, vertebral subluxation complex.

Introduction

A 9 year old female known to me as a patient since birth presented with her mother, complaining of intermittent headache and neck pain. These concerns had been present for months with dismissal from medical physicians on multiple occasions as not warranting further investigation.

During the history the mother noted her daughter was showing 'clumsiness' such as dropping items and bumping into objects, and she felt there was a lack of muscle control and strength. The mother also reported sensitivity to touching the child's head and grooming of hair and regular, persistent nocturnal enuresis for which neither chiropractic nor medical care had provided resolution.

Case history

In utero, the patient had a nuchal translucency test subsequent to indications on ultrasound that chromosomal abnormalities were to be ruled out. An amniocentesis was also conducted two months later. A clinical addendum dated 2010 stated: *'The provision of the serum biochemistry has further increased the risk of Trisomy 21 to a very high risk of Down Syndrome.'* Genetic counselling was thus advised. Foetal morphological assessment impression was *'No unusual features were seen ...'*. At birth the child was considered 'normal'.

At age 5 she was suspected of having Chiari Malformation (CM), (1) inconclusive on a CT scan and which was then ruled out by an MRI under neurological consultation. Subsequently we

... this case report demonstrates that at times it takes an interruption to the typical 'pattern' of a patient to trigger a review through a more broad clinical lens'

Quick Tap or Scan:



1. Mayo Clinic. Information: Chiari Malformation. Retrieved 3 June 2020 from <https://www.mayoclinic.org/diseases-conditions/chiari-malformation/symptoms-causes/syc-20354010>

placed her on a watch and wait program as her symptoms subsided. MRI dated in 2015 stated *'brain is within normal limits with no evidence of cerebellar tonsillar herniation.'*

Clinical suspicion

Currently at 9 years old, it was suspected that the patient could have a hidden progressive disorder, such as raised intra-cranial pressure (ICP) or CM. The family had the child under chiropractic care since birth as a third generation patient of that family and their expressed suspicions were taken seriously.

Clinical actions

An Atlas Orthogonal (AO) upper cervical radiograph series (2) was also taken in 2020 to demonstrate structural compensations and to infer possible causation from the known effects of brainstem irritation, cranio-cervical junction pressure and upper cervical rotatory subluxation which is a common complaint of childhood, that can be congenital or acquired post-natally. (3) My clinic has managed numerous patients with CM over the past 23 years for neck pain and headaches attributed to postural and muscular effects of neurological irritation on the basis that a positive outcome can eventuate with non-rotational, non-manipulative, low impact AO vectored non-surgical reductions of subluxation.

Clinical experience shows there is a fine line between the patient that can be managed with chiropractic care and the one that needs referral to a medical neurosurgical specialty. This level of clinical decision making requires diligent application of clinical experience and, in some jurisdictions if not all, a post graduate apprenticeship, discipline and adherence to continuing educational programs that deliver hundreds of hours to the study of the cranio-cervical junction. There are numerous examples of these programs in the USA (4) and elsewhere. (5, 6)

A cranio-cervical mal-alignment was found on the analysis of the diagnostic images and duly noted as possibly of clinical significance. The unusual finding on the images in Figure 1 is the scalloped internal table of the calvarium, and a 'copper beaten skull' appearance which is associated with raised ICP. This is the point at which the clinical utility of plain radiography meets diligence in awareness of cervical and cranio-cervical syndromes: evidence informed and imaging armed.

Raised ICP

Increased ICP is associated with worse outcome after head or brain trauma (7) and can be diagnosed clinically (8) with:

1. headache
2. nausea

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2. Sweat RW, Sweat MH, Atlas Orthogonal Chiropractic Program 11e. City: publisher 2016. ISBN: 978-0-9846326-1-9.
 3. Sferopoulos NK. Atlantoaxial rotatory subluxation in children: A review. J Radiol Med Imaging. 2018; 2:1009. <https://meddocsonline.org/journal-of-radiology-and-medical-imaging/atlantoaxial-rotatory-subluxation-in-children-a-review.pdf>
 4. Eriksen K. Upper Cervical Subluxation Complex. A review of the chiropractic and medical literature. Lippincott Williams & Wilkins 2004.
 5. Biedermann H. Kinematic Imbalances Due To Suboccipital Strain In Newborns. J Man Med. 1992;6: 151-6.
 6. Biedermann H. Ed. Manual Therapy in Children. 2004. Churchill Livingstone. ISBN 0 443 10018 7
 7. Kikreti V, Mohseni-Bod H, Drake J. J Pediatr Neurosci. 2014 Sep-Dec; 9(3): 207–215.
 8. Increased Intracranial Pressure (ICP) in Children - Symptoms and Treatment. Retrieved 15 May 2020 from <https://www.lecturio.com/magazine/icp-in-children/#definition-of-increased-intracranial-pressure>

3. vomiting
4. drowsiness altered vision

Differential diagnoses to be considered include:

1. space occupying lesion
2. altered CSF production or absorption
3. obstructive hydrocephalus
4. venous obstruction
5. upper cervical subluxation
6. Arnold-Chiari malformation

Reporting findings

MRI dated May 2020 revealed no space occupying lesions or tonsillar herniation, suggesting Benign Idiopathic Intracranial Hypertension. Referral was made through the medical general practitioner to the neurological specialist physician.

Imaging

Fig 1a: Sagittal (elevated ICP skull)



Fig 1b: Frontal (elevated ICP frontal)



Fig 1d: APOM

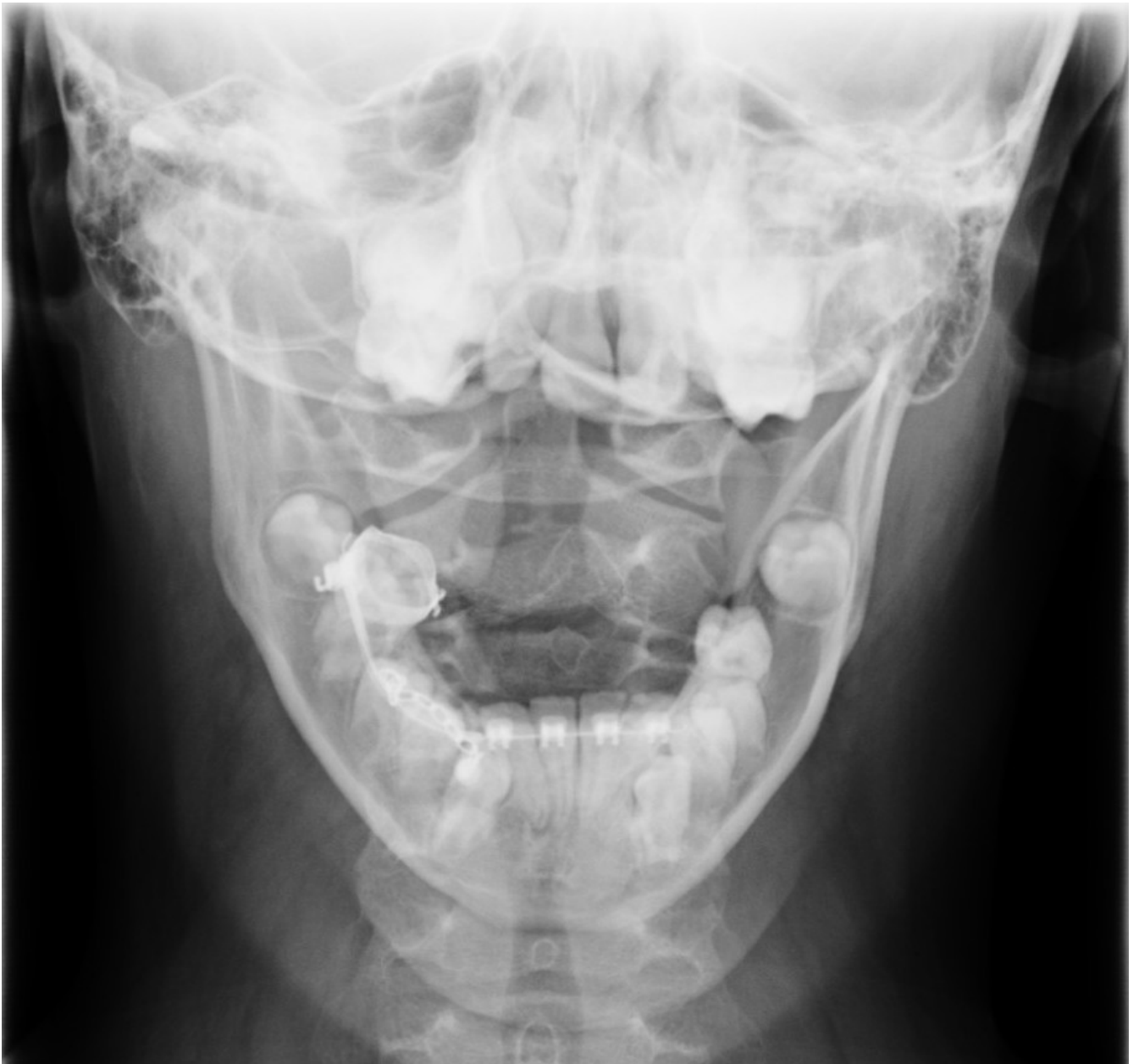


Fig 1c: Horizontal (ICP Horizontal)



The child was seen in 2013 for a 'check-up' after a hospitalisation reported as a viral infection. She had fallen the day before and also complained of a sore head. Her mother reported that the child showed reluctance to eat, however the child's appearance was of being higher than average weight-for-age. On casual observation this could be taken as a familial trait.

Examination on this occasion revealed a 10mm right pelvic deficiency. The adjustment was delivered to 'C1 left' with an AO hand held Instrument and to her thoracic spine as indicated, by Activator.® On review the following week no abnormality was detected and no adjustment was indicated.

About a year later, in 2014, she attended with her mother and complaining of headaches. History revealed she has been medically examined and then attended to me for chiropractic assessment. Adjustment completed as a 'C1 right'. The same finding was adjusted a week later and from that point no further adjustment was indicated that year.

In 2015 her headaches were reported as episodic and a CT was ordered by her medical practitioner; it was reported with implication of tonsillar herniation but later deemed as a false positive. An MRI did not reveal Chiari malformation. In her chiropractic visits the patient was checked and adjusted throughout 2016 and the symptoms would wax and wane. She occasionally presented complaining of a sore neck and head.

In 2019 the patient presented with parental reports of nightly bed wetting for which a paediatrician had prescribed *Desmopressin*, a diuretic found to be ineffective in her case. Reported adverse but rare effects of this drug include muscle pain, headache, and weight gain. (9)

Her chiropractic management included five spinal adjustments (AO instrument for C1 and and Impulse IQ® for lower spine) over a 3 month period and on resolution of her symptoms and signs not being achieved treatment ceased and the patient discharged to the care of the family with a brief to monitor and report in due course.

By 2020 the parents attended with the patient and reports of clumsiness and head and neck pain. This case report documents the progress from that point.

Discussion

The management of neuromusculoskeletal disorders requires knowledge of normal anatomy and functional presentations, both adult and especially non-adult. This case covers pathology that is relevant because of its rarity and clandestine nature, and is known to unfold in the very young with frequent obstacles to its timely diagnosis as a source of pain, and the possible dire consequences thereof.

It is also of interest given the recent tendency to discredit chiropractic physicians who have extensive experience in treating children and their right to due professional recognition and the extent of their education in the care of the neuro-spinal system.

Textbook learning and research paves the way for intention to mastery. Actual mastery of anything, especially diagnosis, entails hundreds, if not thousands, of hours of discipline and research. In the throes of evolution and fine tuning of evidence, we find that novel and newly developed approaches can fall subject to being the flavour of the month or the order of the day. Particular examples are abundant in the field of pharmacological marketing and research, for example. (10)

9. Mayo Clinic. Desmopressin (oral). Retrieved May 2020 from <https://www.mayoclinic.org/drugs-supplements/desmopressin-oral-route/side-effects/drg-20088478>

10. Stafford, R. Too high: Older drugs work well for hypertension, new medications show little innovation. Stanford Medicine. Retrieved 1 June 2020 from <https://scopeblog.stanford.edu/2017/10/12/too-high-older-drugs-work-well-for-hypertension-new-medications-show-little-innovation/>

Detailed imaging such as Magnetic Resonance and Computed Tomography are prime examples that somehow still coexist with our old friend (of the chiropractors in particular) plain radiography. And that 'somehow' is illustrated in this report, that a valuable place can be found for 'x ray' in this day and age.

The purpose of good doctoring and diagnosis, oft scorned as a lost art amongst the technocracy in modern medicine, is balanced between the use of protocols as guidance and experience as application. This is not unlike a very educated and authoritative guess in practice. The goal is the yield of information at the least expense to society with maximal information to assist the patient and highest standard of safety for all. The point is: can an experienced guess actually be of equal use as highly restrictive and proscribed rules? The tenet '*cervical spine views should ALWAYS collimate to exclude exposure to the skull*' was overruled in this instance. Critics of real-world chiropractic practice may go so far as to cry '*never x ray a child*' because of some perceived relative danger. It is not the purpose of this report to assert some ridiculous chant of '*rules are meant to be broken*', rather, that decisions which do not follow the rules may be clinically justified and may yield a more valuable outcome.

Guidelines sometimes appear as rough-cut patterns that do not actually resemble the individual outfit in which each patient may feel comfortable; psychosocially, philosophically and ethically. Often, they are based on a paucity of research, leaving practitioners bereft of choices which in turn incites clinical frustration and the inevitable use of 'unproven' therapies that general chiropractic practitioners and/or academics with limited clinical experience and less specialist training seem eager to criticise.

The phrase '*There is really no such thing as alternative medicine, just medicine that works and medicine that doesn't*' (11) is a simplistic notion that sounds completely true. (12) However experienced practitioners appreciate the paradox that the 'rules' for what works and what does not are about as universal as the general laws of physics applied to the quantum realm. The clinician often has to think twice or more as patients and their presentations are highly variable. The only barrier to this is that most people do present with similar things, at similar times, in similar profiles with similar symptoms and similar outcomes, with hopefully successful management of the patient in the majority of cases.

The learning from this case

The lesson of this report is that a pattern interruption may bring on the depth of critical thinking that uses one's own totality of resources of experience, knowledge, intuition and 'gut feeling' to execute answers to questions and presentations that seem nebulous. In this case, '*something didn't feel quite right.*'

In this case a simple lateral cervical film produced high clinical yield because collimation was not aligned with some published guidelines. The age of the patient was considered cautionary to minimise exposure to ionising radiation. The '*copper beaten skull*' evident on the plain films is related to raised ICP and suggested MRI as the next step in the referral process. Collimation would have denied this clinical finding.

The mother of child was advised to visit their general medical practitioner and a suggestion was made for a neurologist who specialises in paediatric neurology. Therefore suspicions were taken seriously and acted upon.

11. Diamond J. Quacks on the Rack. The Observer. Online ed. London: 3 December 2000.

12. Admin. Science Blogs. There is no such thing as alternative medicine. <https://scienceblogs.com/denialism/2008/04/08/there-is-no-such-thing-as-alte>

The monitoring of a child's growth and development is often more comprehensive when the extended family presents for ongoing spinal care to a chiropractor as their regular primary contact care giver. In this case, familiarity bred results. The evidence was based in the '*chiropractor's practise*' which is an intangible fragment that influences the whole.

Conclusion

This paper points to the role of '*intuition*', '*gut feelings*' and '*experience*' in practice, a role that is often overlooked in the rush to demonstrate compliance with notional evidence-based practice. At least one author (13) has explored the supposed '*unscientific*' notions of intuition and emotion in daily medical practice.

Chiropractors should be careful to not stray off into an abyss of limiting their practice to imposed '*evidence based*' protocols at the expense of acting with maximal clinician intent to achieve the best outcomes for patients. In this context it is important to consider the recollection of what has worked in previous cases, a knowledge of family traits and histories, and intent of providing optimal patient-centred care with proven tools and experience. These may be no more complicated than carefully listening during the consultation for hints that parents and children frequently offer.

The combination of a propensity for timely inter-professional referral, the making of relevant imaging choices, and a knowledge of obscure conditions related to one's chosen field, leads to high sensitivity in the art, science and philosophy of chiropractic.

In turn this allows one to become the oft quoted 'my doctor' to those we serve, implying trust, comfort and longevity of relationship.

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Note: This case is ongoing as chiropractic care continues while the patient is investigated further by medical specialists. This does not yet represent co-management, rather a defensible model of clinical decision making. As it develops will be reported further in these pages.

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13. Stolper, E. et al. Gut feelings as a third track in general practitioners' diagnostic reasoning. J Gen Intern Med. 2010;26(2):197-203 DOI: 10.1007/s11606-010-1524-5 URL <https://link.springer.com/article/10.1007/s11606-010-1524-5>