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Broadcast Summary

The Cranial Approach

With Nick Woodhead

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Nick Woodhead

- One of the founding directors of Rollin Becker Institute.
- Lecturer at the BSO, at both undergraduate and post-graduate level
- External examiner for the Osteopathic Centre for Children
- Lecturer at the Vienna School of Osteopathy

Experience:

- Practising the cranial approach since late '70s,
- Initially used a more conventional, direct approach because that was what patients expected. Not satisfied with results, so shifted much more towards the cranial approach.
- Possibly not the right path for everybody.
- Probably no more than about 5% of structural work now. Examples of when structural approach is more appropriate:
  - adolescents with organic scoliosis
  - feet

Terminology: prefers the expression "cranial approach" to "cranial therapy" – it implies a more all-embracing attitude to patient handling

Rollin Becker Institute:

- Founding father of the cranial approach- Will Sutherland
- Rollin Becker took things a step or two further
  - emphasized what he described as the "silent partner,"
  - the importance of "dialogue by palpation" with the patient's body
  - responding initial diagnostic then therapeutically with our hands.
  - taught in terms of the "inherent intelligence"/"physician within
  - The therapist is the junior partner in the relationship.

Philosophy

- the body is a self-regulating and self-healing organism
- Will Sutherland became fascinated by the sutural architecture in the skull at the turn of the 19th into the 20th century.

- Felt it was there to allow us movement- too elaborate for the skull just to be an ossified structure.
- Found more evidence that reinforced the idea of sutural movement.
    - Sutherland saw resemblance to gills of a fish that moved
    - Across all skulls, majority of sutural bevels are hugely consistent.
    - temporal bone and a parietal bone - a scale-like shape
    - Medial surface of the parietal bone - toothy interdigitations allow for a hinging movement and a separational movement. No gliding movement.
    - different types of movement at different sutural lines.
- Experimented on own head and on cadavers, realized that it wasn't just bone movement of the head but in fact movement controlled by the lining dural membrane:
    - anatomically quite tough
    - has a coordinating effect on the cranial sutures
    - links the base of the skull to the sacrum by what was referred to as co-linked with dural tube.
    - So in many cases (not all), dysfunction at the sacrum, causes dysfuntion at cranial base and vice versa.
- Came to realize that there was something driving this from the inside. Concluded that a combination of brain tissue and cerebrospinal fluid together acted as a kind of motor.

- Present day: inclined to see this as total body micro-motion rather just the head, spinal dura, sacrum being the craniosacral axis. The head moves to accommodate that micro-motion.
    - David Hamm published a hypothesis[1] postulating a physiological mechanism linked to the Traube-Hering-Mayer wave.
    - Now perhaps interpret it as reading the micro-motion in any tissue, probably expressed mainly through connective tissues.
        - Roughly 30% of the body's weight if it was dried out is connective tissues
        - Each connects with another connective tissue: a flexible sub-skeleton.
        - Possibly through connective tissues, whether they be hard connective tissues or bone or more flexible connective tissues such as dura mater, fascial planes, etc., that we're influencing body biomechanics and body physiology.

Extent of cranial approach in osteopathic practice:

- Gareth Butler study showed 22% of people using it to some extent.
- Study was 9 or 10 years ago, so may have changed.

Basics of the cranial movements

- Paired structures get wider - external rotation.
- Midline structures flex (approximation of ventral surfaces).
- With age, the bone becomes more cancellous and more flexible.

[1] Hamm, D. (2011) A hypothesis to explain the palpatory experience and therapeutic claims in the practice of osteopathy in

- The membrane system. Possibly more important - what's happening in the connective tissue system.
- Many asymmetries will have been present since birth. If in adulthood there is a torsion, a twist, that may be part of our basic patterns.
- The aim is not to treat to try to straighten somebody out. It's not doing them any service.
- Aim is to restore efficient function.

Palpation

- Takes practice.
- Numerous wave forms in the body: eg breathing and heart rates.
- Heart rate easy to isolate; breathing less so - it's closer to the tissue movement that we're interested in.
- Need to focus/control one's attention. As in a room with noise - switch your attention to a particular person's voice, or hear your name, your attention goes straight to that.

Frequency of involuntary movement:

- Historically, quoted as 8 to 14 cycles a minute. Possibly the result of getting some involuntary movement and some breathing movement mixed.
- Personally more interested in the nuances of quality, directional distortions, areas of restriction and strain. Rate possibly closer to seven or eight cycles a minute: closer to the rate of Traube-Hering-Mayer wave.
- The Traube-Hering-Mayer wave and its effect on arteriolar movement and tissue motility is at least part of this mechanism. But this mechanism is probably a basket of physiological phenomena all together.
- A lot more work to be done!

Evidence

- Difficult to obtain, both practically and ethically
- Retzlaf-Mitchell in 1980s[2], re sutural mobility:
  - Reliable work
  - On animals, not humans
  - Sensors across sutures to determine movement
- Jäkel[3] systematic review regarding therapeutic benefits of the cranial involuntary approach:
  - involuntary cranial approach does have genuine therapeutic benefits
  - most of the studies quite small scale because of the structure of the osteopathic profession particularly in Europe.
  - cautiously supportive

[2] Retzlaff, EW et al. (1987) *The Cranium and Its Sutures.* Berlin Heidelberg: Springer-Verlag.

[3] Jäkel, A. (2011) Therapeutic effects of cranial osteopathic manipulative medicine: a systematic review. *Journal of the American Osteopathic Association.* 111(12). P 685-693

- Clive Hayden is one of the leading lights in current clinical research:
  - has shown quite significant benefits in treating colic in babies compared with a control group. Now trying to get a much bigger study established.

Research

- Expensive and there's no funding.
- National Council for Osteopathic Research is supportive and helpful but funds have been relatively limited.
- No strong research basis at present, but slowly things are improving

Attitude of conventional practitioners:

- GPs bring their own children for treatment
- Medical practitioners of all disciplines, including GPs, as patients.
- Much greater sense of collaboration in the last15 or 20 years between the orthodox medical service and osteopathy.
- One of the problems is osteopathy is very limited in terms of being available through the public health service and that's an economic problem.

- Public health service concentrates on spinal problems, but osteopathy/manual therapy has much broader potential.
- Long term danger that all manual methods and professions will be drawn down the route of being spinal specialists

Conditions Which May Respond

- Babies
  - Normal (vaginal) delivery:
    - head-first delivery of a baby
    - levels of adrenaline and vasoactive amines are very much higher than adults could tolerate.
    - The baby needs that at the time and it helps baby pick up.
    - The high level of vasoactive amines acts on breathing and respiratory senses to make baby breathe and cry healthily.
    - Colleagues at the Osteopathic Center for Children put a lot of emphasis on first breath as helping to balloon out the baby's head when it's born and open out the lungs.
    - Vaginal delivery is better *because* of the stress that it causes.

  - Caesarean deliveries:
    - First question: why was it a caesarean?
      - Emergency: babies can have gone through an awful lot of trauma before they're brought out. Protocol is 20 minutes from decision to delivery (maximum) to ensure a live birth.

        - Elective: usually done by 38 weeks. Possibly mother's pelvis is too small or very flat AP. Possibly fibroids. Baby may have been growing in a very restricted space than is ideal. Potential for distortions and moulding.
    - Not just the head which is of concern – it's total body strain.
    - Important not to leave out what's been happening leading up to the birth process, especially in the last month but possibly longer than that.
    - Lower level of vasoactive amines produced due to reduced pressure on head

- Patterns of cranial movement after different Presentations
    - Occiput first (ideal because it's the smallest diameter):
        - Less likely to leave major distortions in baby's head.
        - Very typically, because of the spiral nature of birth, and the way that babies' heads turn during the birth process, there's going to be some rotational distortion in the occiput.
        - Very old research, probably flawed research (Frymann[4]) suggested asymmetry in the conduit parts of the occiput in 87% of birth.
    - Face presentation (ie head and neck very extended)
        - Not particularly large diameter, but it's not as strong a part of the head
        - greater potential for the sphenoid slipping in front of the occiput.
        - Possibly more likely to be vertical or lateral strain at the sphenobasilar junction than in an occipital delivery.
        - Face has taken the brunt of the forces of delivery rather than the occiput: may give rise to ENT problems. In extreme cases, children are quite pinched and have narrow nasal passages. Possibly mouth-breathers – susceptible to tonsillitis.

- Patterns following forceps and ventouse deliveries
    - Ventouse
        - Obstetricians have very good reasons for using ventouse
        - Babies' heads don't like it very much.
        - Baby's head doesn't seem to recognizes the strains as easily with ventouse as with carefully applied forceps.
        - Likely pattern:
            - Ventouse, if it's well-applied, is going to be over one parietal or the other.
            - The parietal and the membrane underneath then feels very much out of phase, out of sync with the rest of the head.
            - The natural healing mechanism is unable to resolve it.
            - Feels really quite an un-physiological strain has been introduced.
        - Osteopathic treatment can overcome problems
    - Forceps

[4] Viola Frymann, reference not found

- Strains are a little closer to what the body can recognize and deal with.
- Well-handled forceps are very often far better than the alternative in a difficult birth: a little bit like putting a protective cage around the baby's head. The forceps take some of the trauma and protect the baby's head from it.
- Often one feels that there are strains of the sphenoid:
  - At birth, the sphenoid's in three parts.
    - the greater wing/pterygoid process
    - the body of the sphenoid
    - the lesser wings
  - Strains often seem to occur between the greater wing/pterygoid unit and the central body/lesser wing unit on one or both sides because the blades will usually go down over the greater wings and down over the cheeks. So we have a situation where perhaps the greater wings turned inwards on one side or both in relation to the body.

- Treating of babies
  - Age
    - As soon as possible.
    - Four or six weeks old may be more practical for the family.
  - Poor first breath?
    - Find out about first breath from parents: did the baby cry spontaneously on delivery or not? Was it a good healthy cry or not?
    - Check babies' diaphragms and thoraxes (normal examination, but pay particular attention in these cases)
      - may not be an easy action and a feeling of tightening in.
      - diaphragm will feel a little bit warped.
  - Using palpation-led approach, initially gently, but sometimes in these cases, a little firmer than you might expect to get a release.
  - Use whatever contact is best for the practitioner and the child (Nick prefers an AP contact on the thorax).

  - Variation of techniques vary between children and adults
    - In terms of the principles behind them, very little difference.
    - Firmer contact with adults as a general rule of thumb.
    - A lot of emphasis on how much contact pressure is put on the forearms when working: varying the contact pressure on elbows or forearms at the edge of a couch is an important part of controlling the depth of involvement with the directional strains.
    - Usually in adults, more deep-seated compression in the membranes or bony structure.

- Head pain
  - Not always directly as a result of dysfunction in the head:

        - A fall, trauma, impact to the sacrum and pelvis can limit movement to the lower pole of this craniosacral axis influencing dural tension.
        - If that limits dural compliance, that maybe enough to be responsible for head pain.
    - Possible that a problem in the cranial membranous articular mechanism predisposes person to problems, but they cope until trauma occurs elsewhere.
    - Most likely cause of the pain would be either dural tension and/or venous congestion in the intracranial venous sinuses.
    - It's a total body approach again.
- ENT problems.
    - Some cases of tinnitus are very, very responsive to treatment. Example:
        - A man in his early 40s, history of breech delivery, and forceps. Therefore started life with some dysfunction in his cranium.
        - Poor movement within one of his temporal bones: intraosseous strain or intraosseous compression.
        - Six car accidents (rear-ended) with whiplash injuries further compromised the compliance of his cranial articular membranous mechanism.
        - Predisposed him to recurrent ear infections which have gradually done more and more damage in the middle ear.
            - ear surgery to repair tympanic membrane.
            - 9 or 12 months of treatment but tinnitus has gone, he's no longer susceptible to ear infections.
        - Cranial approach is perhaps one of the few approaches that could have helped in this case.
- TMJ
    - Theory:
        - More mobile joint whereas skull is much less mobile.
        - Distortions in the cranial base, from which the mandible is suspended particularly by the sphenomandibular ligament likely to be accommodated at the most mobile joint – the TMJ.
            - Leads to a dysfunction, sloppiness of ligaments, becomes a stimulus for increased tone in the masticatory muscles and a downward spiral.
            - Therefore get away from the joint itself and look above and behind it to see what dysfunctions are there.
    - Are there predictable patterns in the temporal bone, the sphenoid, and occipitomastoid suture (the "weird bevel")
        - Not much commonality with these cases.
        - Temporal bone function and sphenoid function is nearly always compromised in TMJ cases, but it's not possible to be more specific.
- Tinnitus
    - Difficult to treat if very chronic, more optimistic with cases of 6-12 months duration.
    - Pulsatile tinnitus:

        - ie arterial pulsation rate
        - often turbulence in the internal carotid arteries, which weaves its way through the temporal bone.
        - Then looking for what's wrong with the temporal bone or both the temporal bones and the mechanics of that which is causing a turbulence in the arterial pathway.
    - More optimistic in these cases
- ADHD
    - Possibly made a lot of difference to sufferers.
    - Frequently, there are quite major dysfunctions involving temporal bone sphenoid and the membrane adjacent to that attributable to birth history.
    - In the cases that we can help, nearly always a positive birth history of something that's been too slow, too quick instrumentation at birth.
- Autism
    - Typical feel to a true autistic:
        - "bowling ball" head
        - very tight, pumped-up tight feel.
    - Very difficult to make a change.
    - Difficult to treat because they don't want to keep still.
    - Small proportion of youngsters "on the autistic spectrum':
        - Doesn't feel typical of an autistic.
        - More hopeful that we can help with what I refer to as membranous compression, a tight feeling in the membrane system.
        - Slow course of treatment very often.

Influencing the movements of the cranial joints.

- Same principle as for all joints: could be the temporal bone, sacrum, foot, ankle or knee.
- Micromanaging the tension and, to some extent, the position of the structures to create just the right conditions for a little release to take place.
- That release is driven by tissue micro-motion linked to the physiology of fluid wave forms in connective tissue
- This creates the right conditions for that physician-within principle to make a correction.
- Reassessment before the next phase of micromanagement trying to find the right conditions for another release to take place. So in a healthy individual, working in perhaps different parts of the body guided by palpation, expect to get 10 or a dozen little releases in a single consultation.
- Consultations usually 20 minutes hands-on, maybe longer if somebody has not got terribly good tissue quality

Contraindications

- head trauma where there's the risk of, undiagnosed or otherwise, fracture or bleed within the last six weeks.
- The overriding contraindication of not having a rational diagnosis.

- In certain conditions, no work before thorough investigation – eg MRI scans.
- relative contraindication is instability. Eg:
  - lady struck to one side in the back of her head by vertical door handle, over the occipitomastoid suture (no fracture)
    - she felt giddy, fainted immediately and was hospitalized.
    - still had a lot of vertigo at the time of consultation.
    - contacting her head started to provoke quite severe vertigo within a matter of seconds, so there's a relative contraindication to working directly on the head.
    - therapeutic changes achieved by indirectly by working from the other end of her craniosacral system, using the spinal dura as a sort of a multidirectional set of gyrus.

Adverse reactions to cranial treatment.

- Cranial approach is very safe.
- CVA is not a realistic risk - climbing the stairs is more stressful to the venous architecture than cranial treatment.
- Main risk:
  - Misdiagnosis or insufficient diagnosis.
  - In such cases, the practitioner is possibly not listening to the response they're getting (seeking a release at all costs).
- Possible side-effects:
  - Vertigo.
  - Nausea and vomiting

Movement in bone, fluid and membranes – which is preferable?

- In the cranial context, bone, fascia, fluid, membrane is much the same thing.
- Different qualities – each examination elicits a mix, which might change as a treatment goes on.
- There's no hierarchy.
- Recognising the different qualities helps engagement with the right components of tissue motility and fluid.

How long to become competent?

- seeing patients quite regularly using the involuntary approach in practice, I think by the time they've been using it for two years with a bit of support from somebody, they're pretty useful.
- mentored through those first two years is ideal - doesn't have to be two people in the same room all the time. Available for advice can be sufficient.
- Disappointing that many newly qualified osteopaths are left to their own devices.
- *Good* mentoring generally would be good practice across all professions. Good for the senior person as well to shake them up a bit.

Advertising and publicity

- Nick's website[5] talks about the approach that we've been talking about in terms of gentle listening and so on so forth.
- Don't mention conditions.
- Word of mouth may be the best method
- The Osteopathic Development Group:
  - Representing osteopathy, looking at a way of trying to get a cautious change in the Advertising Standards Authority's stance on what can and can't be said.
  - Consists of The Osteopathic Alliance, Osteopathic Colleges or Schools, the Institute of Osteopathy, and the General Osteopathic Council.
  - The Osteopathic Alliance: a grouping together of post-graduate training organizations (Rollin Becker Institute, Society of Osteopaths in Animal Practice, etc)
  - Hope this will be beneficial not just to osteopathic profession but to all health care professions.

Placebo effect.

- Not to be dismissed. Many factors contribute:
  - Comfortable environment
  - Interested practitioner
  - Possibly quite different from orthodox medicine because of time pressures on GPs.
- If all this makes patients feel better and makes them better, it's not necessarily wrong, as long as fees are reasonable.
- Aim is to make patient feel better.
- Diagnostic safety still paramount - making sure that there isn't a better place for this person to be looked after.

Current Research

- NCOR has research hubs in the country
- Nuclei of osteopaths who are interested in research so that they collaborate, with support from NCOR as the national organization.
- In the cranial field in the UK, not aware of a lot being done.
- In the US Michael Kuchera has a lot of funding to do research on clinical outcomes.

Accessibility to non-osteopaths?

- Comparable structures of training in the chiropractic field.
- Courses of training in craniosacral therapy accessible to people in other manual medicine disciplines.
- The involuntary or cranial approach is accessible to people across all areas of manual medicine.
- Rollin Becker Institute only open to osteopaths.

[5] http://www.nottinghamosteopaths.co.uk

- intensive course which is run over five or six days and is the same syllabus as our American mother organization, the Sutherland Cranial Teaching Foundation. Comparable in terms of content to the same thing run in Australia and New Zealand and I think also in Belgium.
- Also teach the British School of Osteopathy as a post-graduate intensive course. So that's the foundation or the core course.

- Planning a head pain course which will include neurologists and ENT specialists on a differential diagnosis
- Planning a course on paediatric primitive reflexes and retained reflexes in adults because that has quite a lot of relevance for people with learning difficulties.

Q. Do you cross-refer?

- Mostly within the profession for high velocity work.
- Occasionally outside the osteopathic profession
- Not averse to hydrocortisone injections for tendonitis if it's a traumatically acquired thing through sport or something of that sort of thing.

Q. Do people seek the cranial approach as a first option or a last resort?

- Both.
- Last resort cases are generally complicated which is challenging.
- In reality, in all sorts of health, it's a relative thing: getting somebody to as good a level of function as possible particularly as we age. Full resolution may not be possible.

Q: *The Inner Physician* is a title of a book by Upledger: which came first – Rollin Becker's description or Upledger's description?

- I can't say with any absolute certainty but having met John Upledger in his earlier days, I do think that Rollin was saying this beforehand because terms such as "physician within" and "silent partner" appear in things that he published I think in the 1960s. I don't think John Upledger was publishing until the '70s.

Q. As soft-touch receptors are set to project into the limbic system, do you think that that mechanism could explain some of the benefits of the cranial approach?

- I suspect it may do. A lot of patients feel that treatment is quite a relaxing experience. Some of the research suggest that treatment has a beneficial effect on sympathetic tones. So whether we can pin that on the limbic system directly or not, I'm not at all sure, but we do know that part of the limbic system, the cingulate gyrus, is responsible for a lot of autonomic functions. So it would be logical.

Q: How late in life would you still recognize those patterns or attribute them to the birth process?

- In some cases, these things can possibly persist into adult life.
- Tinnitus patient in his early 40s - pretty sure that the dysfunction in his temporal bone was attributable to the birth history.

Q. Girgis, Scott, and Pritchard found in their research that cranial sutures had five distinct layers of connective tissue allowing for expansion and contraction. Retzlaf and colleagues found neurological stretch receptors with the entire sutural areas supplied by a rich vascular network. So the potential for motion exists but can we honestly claim that manual contacts can alter these cranial sutures? Or is it in the imagination of the osteopath?

- Retzlaf-Mitchell did a huge amount of work mostly good quality. Some of the work they did showed that hands on work was changing the pattern of movement, direction of movement of some of these things.
- There's a fairly thin but useful book called *The Cranium and Its Sutures*. It was published a long, long time ago but it's got a lot of their work summarized in it as sort of an expanded bibliography. So I think that we've gone beyond just saying there's potential for movement. I think that the research shows that there is movement. We're a bit weaker on therapeutic responses but the Jäkel paper published four years ago, whenever it was, goes as far as it can.

Q. You say you're drawn to the problem when you're palpating. James Jealous in the biodynamic approach or the cranial approach would say look for the health within. Do you have any comment on this difference?

- I'm pretty much in accord with that, yes. I suppose that goes back to Still saying, "Osteopaths look for health - anybody can find disease." We're looking for health and we're trying to contact that something, that spark if you like, that is going to deliver health to this individual and our job is to try to find a way of making it manifest.