

Gua Sha: A Clinical Overview

by Arya Nielsen

Gua Sha is a traditional healing technique widely used in Asia, in Asian immigrant communities, and by acupuncturists and practitioners of traditional East Asian medicine worldwide. With *Gua sha*, a smooth-edged instrument is used to apply unidirectional surface pressure that raises transitory petechiae and ecchymosis, similar to the petechiae raised by cupping but typically over a larger area. Regarded as effective for blood stasis, *Gua sha* treats the 'fixed' feature of any presenting problem whether acute or chronic including but not limited to pain as well as in mild to severe conditions such as colds, flu, fever, heatstroke, and respiratory problems such as asthma, bronchitis, and emphysema; functional internal organ problems as well as musculoskeletal problems from fibromyalgia to severe strain, spasm or injury (Nielsen, 1995).

Gua sha is the technique of choice for any case of recurring fixed pain and when pressing palpation reveals 'sha stasis' (Nielsen 1995, p50). It is used as a form of familial care in the home (Craig 2002, p118-119; Fadiman 1997, p64-65, 267; Hautman 1987; Van Nguyen 2004, p300) as well as in traditional East Asian clinical practice (Nielsen 1995; Zhang and Hao 2000).

This article gives a short overview of *Gua sha*, its indications and contraindications, reported complications in the context of how *Gua sha* has been regarded in Western medical literature and the status of research concerning *Gua sha*.

Overview

Gua is Chinese and literally means to scrape or scratch (So 1987, p43) which might seem to imply abrasion or injury to the surface; however there is no abrasion with *Gua sha*. *Gua* more accurately describes repeated unidirectional pressured stroking with a smooth-edged instrument over a lubricated area until *sha* blemishes appear. Stroking is then applied to an adjacent stroke line until *sha* appears. This continues until the area intended for treatment is covered (Barefoot Doctor's Manual 1977, p79-80; Nielsen 1995; Nielsen 2002). *Gua sha* over the upper back, for example, takes approximately 5-10 minutes.

Sha is a polysemous term. It describes stasis within the tissue as well as the petechiae raised from *Gua sha* signifying liberation of that stasis (Nielsen 2007, p8). *Sha* is literally translated as 'sand, sharkskin or red, raised millet-size rash' (Ou Ming 1988), terms that describe the appearance of sha petechiae as well as the feel of it, rough like sand or sharkskin. *Sha* is most closely described as petechiae though much of the time the extravasated blood appears as red macula that immediately change and fade to ecchymosis.

Sha, also translated as cholera (Mathews 1931; Weiger 1965), resembles end stage choleric purpura. *Gua sha* was used in the treatment of cholera and cholera-like disorders (So 1987, p314-315) as was the technique of frictioning used for cholera in early Western medicine (Jackson 1806). In early Western medicine, also known as Hippocratic medicine, choleric purpura was registered as the crisis stage of cholera; hence treatment creating or mimicking the crisis 'became a cure' (Nielsen 1996).

Suspicion of traditional indigenous medicines in the West may arise not only out of discomfort with the foreign 'other' but out of discomfort with the West's own abandoned medical past. Traditional East Asian medicine and early Western medicine share a similar 'counteractive' or 'allopathic' philosophy, and therapies belonging to these groups/periods are rather similar. Whatever the convergence of discomforts, traditional East Asian medicine generally and *Gua sha* specifically was experienced in the West as dubious at best. The most popular feature film in China in 2001, *The Gua Sha Treatment* was made in the U.S. and tells the story of Chinese immigrants who were persecuted when the *sha* on their son's back was mistaken for child abuse. *Gua sha (cao gio)* appeared in one other American feature film *The Three Seasons* about post war Vietnam starring Harvey Keitel. One of the film's themes involves a prostitute who feels incapable of responding to love from a true, if poor, bicycle taxi driver. In one intimate scene, he performs *Gua sha* on her back with slow intentional movements. The implication is that the technique will remove the 'stain' fixed on her body from the touch of her johns; the memory and constant reminder of her work that disenables her from feeling loving touch. Unfortunately, the shock for an audience unfamiliar with *Gua sha* detracts from the precious insight of another way in which *Gua sha* 'heals'.

In Vietnamese *Gua sha* is called *cao gio* (pronounced cow-yo meaning to scratch out the wind) (Mudd and Findlay 2004; Craig 2002); in Indonesian *kerik* (ka-drik or ka-drok) (Zuijlmans and Winterberg 1996) or *kerokan* (Wilson 1994); in Khmer Cambodian *kos kyal* (kos kee-yaul) (Kemp 1985; Frye and D'Avanzo 1994) or *ga-sal* (Nielsen 2005); and in Laotian *khoud lam* (cood-lum). Common translations include coining, scraping and spooning. Until recently Western medical literature has misinterpreted *Gua sha* as a kind of abuse, pseudo-abuse, or factitial meaning self-inflicted, abuse.

Tools

As an essential technique of traditional East Asian medicine both in the home and in the clinical setting, tools used to apply *Gua sha* vary from a simple Chinese soup spoon, a smooth coin, or even a slice of ginger to instruments fashioned from cow bone, water buffalo horn, jade or stone (see figure 1). The important feature of a *Gua sha* tool is that the edge be smooth, not so sharp that the skin breaks but also not too blunt as to cause pain. A simple smooth-edged metal cap readily available in most homes (like that on Solgar vitamin bottle) is a perfect fit for *Gua sha* and recommended for use by Dr. James Tin Yau So, the well-known 'father of American acupuncture', and co-founder of the New England School of Acupuncture where *Gua sha* was first introduced as part of the curriculum for acupuncture study.



Figure 1. Gua sha tools shown: A Chinese soup spoon, round smooth-edged caps, and slices of water buffalo horn. Coins, honed jade and stone instruments are also used as well as a stiff slice of ginger (Nielsen 1995, p52).

How to *Gua sha*

Gua sha applied to the back begins at the centre-line using a smooth round-edged tool that is press-stroked into the flesh enough to contact the fascial layer (see figures 2 and 3) but not so hard that it causes pain or discomfort. A stroke line is typically 4-6 inches long.

Stroking is repeated in one direction until the sha is raised on that stroke line, typically 8-12 strokes, see figure 4. Some articles incorrectly describe application by rubbing back and forth with a coin (Lederman and Keystone 2002; Walterspiel, Rogers and Kemp 1987).

This represents a misapplication of technique that could result in abrasion and not the therapeutic petechiae sought. Sha petechiae fill the stroke line area as stroking proceeds. Stroking stops when all the sha is expressed as petechiae or macula at the stroke line, before producing ecchymosis, which occurs naturally as petechiae begin to fade and blend.

Gua sha stroking is then continued at the next stroke line directly adjacent to the one before. This goes on until the area to be treated is covered (Nielsen 2008, p4).

For complete instructions on how to apply *Gua sha* refer to the textbook *Gua sha A Traditional Technique for Modern Practice* (Nielsen 1995) and *Gua sha: Step-by Step*, a Teaching Video (Nielsen 2002).

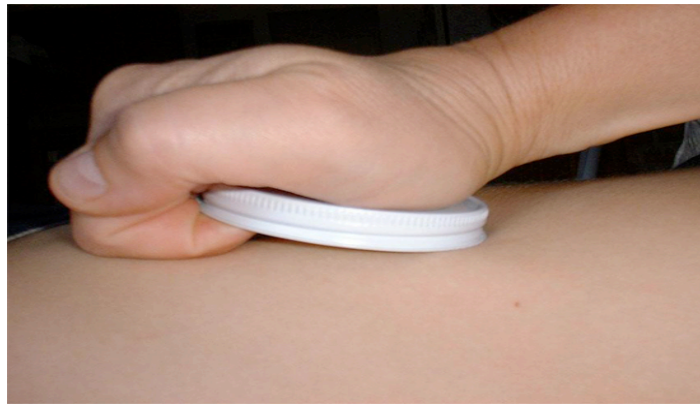


Figure 2. Gua sha tool pressing into fascial layer from right to left. The skin is lubricated with oil or a thick balm like Vick's Vapo-rub or preferably Badger Balm (which is vegetable based and not a petroleum product).



Figure 3. Gua sha tool pressing into fascial layer from left to right. Notice in both images the tool is buried in the provider's hand, that is, the touch of the provider's hand softens the sensation of the tool.



Figure 4. Sha raised on patient (Nielsen 1995, p54)

Indications and contraindications

Presenting symptoms and certain palpatory signs indicate a need for Gua sha. Any pain, acute or chronic and any presentation that has a 'fixed' or 'recurring fixed' feature to its inherent waxing and waning cues the provider to consider and palpate for sha stasis.

Dr. So discovered that sha stasis could be seen on the surface by the colour of the skin and by its reaction to palpation. The skin may appear blue or purplish, or pressing palpation may cause reddening known as erythema, or blanching that is slow to fade (see figure 5 and 6). Here sha stasis is seen to retard the circulation of Qi and Blood in the surface tissue which can reflect from and ramify to the tissue and organs beneath the surface via the path of Qi, or horizontal emanation of Qi through the fascia or connective tissue.



Figure 5. Pressing palpation



Figure 6. Blanching from pressing palpation. Blanching that is slow to fade indicates sha.

Gua sha is applied at the front and back of the body to affect the flesh, organs or function of that 'Jiao' or section of the body, according to the view of Classical acupuncture and channel trajectory in the tradition of Dr. So (1984;1987).

Gua sha is contraindicated over any area that has been recently traumatized, fractured, contused, broken, scratched or burned. However, even in these situations *Gua sha* can be used adjacent to or distal from but along a channel that coincides with injured tissue to help resolve stasis and move Blood. *Gua sha* is not done over genitals or over any raised skin such as moles or pimples; it may be done sparingly by an experienced practitioner in pregnancy or when a patient is taking blood thinners such as aspirin, plavix, coumadin or heparin.

Beyond these general rules *Gua sha* must always be applied with sensitivity to the condition and constitution of the patient. It is not the case that *Gua sha* is prohibited during menses or with blood deficiency. On the contrary since *Gua sha* moves stuck Blood it can promote the formation of Blood in Blood deficiency cases.

Complications

The most common complication with *Gua sha* is mild soreness when the technique is overzealously applied. The most significant complication related to *Gua sha* reported in Western medical literature is its misinterpretation as abuse. '

Complications' have been misreported in Western medical literature where *Gua sha* is signified in a negative register of warnings and hazards with 56 citations using terms such as abuse/not abuse/pseudo-abuse, child abuse, battery, pseudo-battery, trauma, torture, injury, bruising, burns, scarification, or by terms that inaccurately describe the red petechiae as dermatitis, dermabrasion, pseudo-bleeding disorder, nummular erythema, purpura, hematoma, even cutaneous stigmata. Six citations appropriately refer to *Gua sha* as 'petechiae and ecchymosis. (For a full list of citations from the Western medical literature see *Gua sha* research and the language of integrative medicine (Nielsen, 2008) or *The Effect of Gua Sha Treatment on the Microcirculation of Surface Tissue: A Pilot Study in Healthy Subjects* (Nielsen et al. 2007).

Research

Gua sha has maintained a place in East Asian medicine by the experience of its effect. Recent research into the biomechanism of *Gua sha* has illuminated at least a partial knowledge of the physiology of its therapeutic effect.

In a lab in Germany, a team of researchers used laser Doppler imaging to assess changes in microcirculation, that is, surface

tissue perfusion, as a direct result of *Gua sha* (Nielsen, Knoblauch, and Dobos *et al.* 2007). Eleven healthy subjects were tested establishing nascent microcirculation levels, given *Gua sha* and then scanned again every 2.5 minutes for 25 minutes after treatment. Changes in perfusion were compared to nascent levels and to a control site in each subject that was not treated.

Gua sha resulted in a 400 % increase in surface perfusion for a full 7.5 minutes after treatment and a significant increase in perfusion for the full 25 minutes studied (Nielsen *et al.* 2007). Pain relief at the treatment site was maintained to a great extent at follow up scans 2 or 3 days later even though perfusion rates returned to baseline. Pain relief at control sites experienced immediately after *Gua sha* was not related to a change in surface perfusion as control sites saw no perfusion change.

What is interesting about this study is that increase in microcirculation rates were limited to the area treated but pain relief extended beyond the area treated and beyond the time of microcirculation change. While increase in perfusion represents a physiologic change associated with *Gua sha*, it is a partial knowledge; more study is needed into the therapeutic biomechanisms of *Gua sha*.

By way of comparison to other perfusion studies Mars *et al.* (2005) demonstrated increased skin blood flow from compressed air massage that immediately fell when treatment stopped. Kuo *et al.* (2004) used laser Doppler scanning to demonstrate a small but significant increase in skin blood flow from de qi acupuncture, both in the hand point needled (LI 4, Hegu) with short-lived spikes in skin blood flow up-meridian at elbow point LI 11 (Quchi). Sandberg *et al.* (2003) studied superficial muscle blood flow changes from acupuncture needling, finding that acupuncture with a de qi response increased superficial and deep muscle blood flow by 75% for the first 5 minutes after needling. In contrast, *Gua Sha* increased superficial blood flow by 400% for the first 7.5 minutes, with significant increases maintained for the full 25-minute period studied. *Gua Sha* appears to sustain an increase in microcirculation greater and longer than massage or acupuncture.

More recently Schwickert *et al.* (2007) have documented a case study of a 72 year woman who suffered from chronic headaches responded to *Gua sha* treatment at the Kliniken-Essen in Germany. A study on *Gua sha* for neck pain is forthcoming from the same group who has also published an article discussing the neurological basis of 'reflex' therapies such as *Gua sha*, massage, cupping and acupuncture (Musial, Michalsen and Dobos 2008). Chiu, Chang and Gau (2008) have demonstrated the usefulness of *Gua sha* to facilitate nursing in parturient women with breast fullness. Finally, regarding Western medical literature two studies looked at a technique similar to and likely derived from *Gua sha* where petechiae are intentionally raised in what is called 'instrument assisted soft tissue mobilization'. Application to rat tendons (Davidson *et al.* 1997; Gehlson, Ganion and Helfst 1999) resulted in fibroblast activity and the authors propose fibroblast proliferation as a possible biomechanism of healing. Dr. Helen Langevin's team at the University of Vermont has established fibroblast activity resulting directly and immediately from acupuncture needling (Langevin *et al.* 2001; Langevin *et al.* 2002; Langevin and Yandow 2002; Langevin *et al.* 2005) with implications for a mechanotransduction-based biomechanism (Langevin *et al.* 2006).

Chinese medicine database

A literature search of the Chinese medicine journal database from 1984-2004 found 120 outcome studies on *Gua sha* published between 1998 and 2003 (Nielsen 2007) confirming the use of *Gua sha* as a therapy in clinics and hospitals in China. Twenty-five percent of the articles dealt with some kind of neck problem or coinciding neck and shoulder problem where the N of subjects ranged from 28 to 410 per study. Twelve studies were on frozen shoulder; seven for lumbar strain or pain and others for pain or immobility associated with sciatica, ankylosing spondylitis, arthralgia and osteoarthritis. *Gua sha* for pain not related to musculoskeletal problems is studied in the treatment of trigeminal neuralgia, postherpetic neuralgia, epigastric pain, headache, migraine, sinus and supraorbital pain, as well as dysmenorrhoea and renal colic.

In addition to chronic problems *Gua sha* was studied for acute infectious illness with fever, respiratory infections, conjunctivitis, pharyngitis, sinusitis, bronchitis, pneumonia, and influenza are listed. Chronic recurring infections are treated as well such as recurrent mastitis, infantile diarrhoea, and hepatitis B. Chronic disorders such as ulcerative colitis and haemorrhoids are listed, as well as use of *Gua sha* in treatment for acne, styes, insomnia, dizziness, neurasthenia, ascites secondary to liver cirrhosis, adhesive small bowel obstruction, and thermal dysregulation in the form of low body temperature and sensitivity to cold, or prostration due to heat presenting as heatstroke and sunstroke. (Nielsen 2007, p22-23). Finally it is important to note that some of these studies looked at the effect of *Gua sha* combined with other therapies such as Tui na, bloodletting, acupuncture or cupping; a combination of therapies is often a reality in a functional clinical setting.

There were no studies on establishing biomechanism of *Gua sha* in the Chinese medicine database; the perfusion study appears to be the first looking at the physiology of *Gua sha* using multiple subjects.

Conclusion and Cases

Research into biomechanisms and effectiveness supports traditional use of *Gua sha* and piques interest in its relevance in the modern clinical setting. Practice in an integrative medical setting in New York City exemplifies how valuable *Gua sha* can be.

At the Continuum Center for Health and Healing, the outpatient clinical setting of the Department of Integrative Medicine of Beth Israel Medical Center, a teaching hospital of Albert Einstein medical college, there are three licensed acupuncturists on staff with privileges to treat hospital inpatients, as well several physicians certified in acupuncture. There have been many instances where one of the family practice physicians will see a child having an asthma attack, or what has come to be called reactive airways. Conventional standard of practice is to give medicine using a nebulizer and prescribe oral or inhaled steroids as well as other medicines to subdue the reactivity, and then wean the medicines over time, assessing which meds need to be maintained. Our team has found that treating the patient with *Gua sha* after nebulizing can reduce or even avert the need for further use of steroids. Assessment may be made as to diet, activity, exposure and so on using an integrative medical model to support the patient and family in mitigating future reactivity. Here *Gua sha* has an important role in treating wheezing and dyspnoea and in reducing need for medication in an acute presentation as well as over time to manage chronic symptoms.

Acute or chronic problems of any kind should be assessed for sha stasis by taking a careful history of the location, quality and mutability (Nielsen 1999) of presenting signs and by palpating surface tissue. *Sha* stasis can be part of the morphology of illness generalized to almost any organ pathology. So whatever the TCM diagnosis, from the point of view of classical practice in the tradition of Dr. So, skilled interactive responsiveness is valued over theory detached from the clinical moment.

That is, knowing how to recognize *sha*, how to apply *Gua sha* guided by indications, contraindications and with the additional evidence from research will help any provider respond to stasis not easily resolved by other methods.

Biography

Arya Nielsen has a PhD in integrative clinical science and healthcare and is a professor of traditional East Asian Medicine, U.S. Board Certified in Acupuncture and Chinese Herbal Medicine, and past Chair of the New York State Board for Acupuncture. She has been in private practice for over 30 years, is a Senior Faculty member at the Tri-State College of Acupuncture (NY), Guest Faculty at the Anglo-Dutch Institute of Oriental Medicine in the Netherlands and Adjunct Faculty at Beth Israel Medical Center's Department of Integrative Medicine at the Continuum Center for Health and Healing in New York City, where she also sees patients. Dr. Nielsen is director of Beth Israel Medical Center's fellowship training in hospital based acupuncture care. She also lectures on topics in traditional East Asian medicine and integrative medicine. She is the author of *Gua Sha, A Traditional Technique for Modern Practice* and may be contacted by email at anielsen@chpnet.org or at her website www.guasha.com.

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