Doctors in training are often challenged by clinical cases which don’t seem to make sense. In describing pain episodes, patients will sometimes use hand gestures as part of their communication. Hand gestures are more likely used in clinical settings when words are hard to find, when spatial representation is important, where there are language difficulties, and when it is the most important thing the patient says. The hand gestures are perhaps most important for the learner to observe when they are discordant with what the patient is saying. When the hand gestures gives different information than the verbal message, it is often the hand gesture that provides critical diagnostic information. These spontaneous, meaningful, explanatory gestures can be so useful for the clinician, that we give it the term the Visual Chief Concern. The Visual Chief Concern is distinguished from other non-verbal communication that add intensity and emotion to words. The Visual Chief Concern is an additional tool for experienced clinician and trainee alike.

**Keywords:** hand gestures, chief complaint, bedside medicine, literacy

**Introduction**

“The problem doesn’t make any sense.” Helping doctors in training to sort out a patient’s pain can be a challenging task. A confusing history is particularly an issue when the stated chief concern does not fit well with other data. The chief concern (or chief complaint) is universally recommended as an essential part of a patient’s initial evaluation. It has been used for hundreds of years and purports to tell not only the main thing on the patient’s mind, but often to suggest the diagnosis. The seasoned clinician will recognize that there are circumstances when the stated chief concern is less useful. Patients may state a “chief concern,” while their critical health issue (i.e., depression) is different. Observing a patient’s body language is well understood, but the importance of the patient’s specific use
of hand gestures in the description of pain is not well described. We introduce the term “Visual Chief Concern” to describe when patients meaningfully communicate with hand gestures in a way that aids diagnosis, often going beyond their verbal message. By teaching trainees to carefully watch the patient’s gestures during a description of pain, we will help them solve confusing cases.

**Background**

There are multiple kinds of hand gestures that are defined in the literature. Most useful are deictic gestures, which help to locate pain, and iconic gestures, that characterize the nature of the pain. Deictic and Iconic gestures are the specific hand gestures that contribute to the Visual Chief Concern (Hostetter & Alibali, 2008; Rowbotham, Holler, Lloyd, & Wearden, 2012), and will be most useful to the training doctor.

Patients use gestures consciously or unconsciously to aid in communication. They may be used to help the patient actually formulate their thoughts (Goldin-Meadow, 1999). In the expression of pain, the patients give more specific information about the same pain sensation via gesture, or they may add completely new aspects verbally saying “sharp”, while visually gesturing “throbbing” (Rowbotham, Lloyd, Holler, & Wearden, 2015).

Gestures Matter. A recent review of the role of gesture in experimental settings makes it clear that it does aid in comprehension (Hostetter, 2011). In qualitative research studies, patients use gestures to indicate location of pain, to demonstrate painful actions (radiation of pain), and to demonstrate painful sensations (pricking) (Rowbotham, Lloyd, Holler, & Wearden, 2015).

In experiments by Rowbotham et al. (2012), where verbal and gesture information about a pain experience were videotaped and coded, 7 parameters of pain description (quality, intensity, size, effects, duration, cause, awareness) were analyzed. Representational gestures, those more likely to give specific information about the pain, actually gave more information than did the verbal content. Regarding pain communication, 41% was only delivered in gesture, and not in speech. Another 36% was delivered in speech complemented by gesture. Only 23% of the pain communication was given by word only.

Furthermore, when pain is severe, pain sufferers use both more verbal and more hand gesture (Rowbotham, Holler, Lloyd, & Wearden, 2014).

**Key Uses of Hand Gestures**

Gestures are used specifically in several settings. When it is the most important thing: Speakers are most likely to use their hands for portions of the communication that they perceive as the most important or most painful (Hostetter & Alibali, 2008). A patient may say they have a sinus headache, while rubbing the back of their neck (suggesting cervicalgia as the main issue).

If patients need to describe spatial issues (i.e., locating pain), they tend to use their hands more, particularly if the “space” is not entirely clear in the patient’s mind. For example, a patient says his “whole hand is numb” with prolonged talking on a cell phone, but his gestures are exactly over his ulnar nerve distribution (Krauss & Hadar, 1999). For communication issues such as visceral pain, that are vague or hard to image, gestures are more likely to be used to “complete” the communication.

There appears to be a “gesture threshold” for more challenging communication, beyond which speakers are much more likely to use their hands. When there are word-finding problems, gestures are more likely to be used (Krauss, R.M., Chen, Y., & Gotfexnum, R.F, 2000). Speakers lower their gesture
threshold when they perceive that the issue is hard to communicate (Morsella & Krauss, 2004). Much of pain and illness that we experience is actually hard to put into words. Issues hard to express may not be clearly formulated in a patient’s mind, so their hands attempt to clarify the communication. Similarly, if a patient feels that the doctor won’t understand a sensitive issue, they are more likely to gesture (Sueyoshi & Hardison, 2005).

When the patient has limited health literacy or their mother tongue is not the same as that of the doctor, gestures improve the outcome of communication (Sueyoshi & Hardison, 2005). Low literacy and language challenges are common in US clinics. Fully 42% of patients in the US speak English less than “very well” and about 25% of the U.S. population has low health literacy (PaascheOrlow, M.K., Parker, R.M., Gazmararian, J.A., NielsenBohlman, L.T., & Rudd, R.R., 2005).

Discordant Hand Gestures

When the hand gestures are discordant, giving contrasting information to the stated chief concern, the clinician educator needs to help the learner pay particular attention to sort out the difference. The hand gesture may actually point to the correct diagnosis, but it can also be confusing “noise” in the communication. It is essential to carefully parse out the true meaning of the gesture. “One might expect that it is precisely in situations of gesture–speech mismatch that gesture can play its largest role in communication.” (Goldin-Meadow, 1999, p.7).

Discordant hand gestures may be important because gestures in general are more spontaneous and less “considered”, thus allowing the patient to bring in new, novel and potentially contradictory ideas into their communication without internal mental conflict. A patient who says his liver hurts and points to his pelvis, is holding at some level two ideas; one that he feels pain in his pelvis, and two that he thinks this is his “liver pain”. “Gesture is an ideal modality within which to consider for the first time notions that are not fully developed. Not only are the notions conveyed in gesture likely to go unchallenged by others, but they are also likely to go unchallenged by oneself. A speaker can unknowingly ‘sneak in’ an idea in gesture that does not cohere well with the set of ideas the speaker routinely expresses in speech” (Goldin-Meadow 1999, p. 9). It is in fact, in this discordant or mismatched state, that the gestures often reflect the patient’s Visual Chief Concern, and are most helpful for the training doctor.

In summary, students and trainees should be taught about the importance of the Visual Chief Concern, particularly when they find their patient a “poor historian,” there are language or low literacy issues, or the topic is of a sensitive nature. The chief concern can be both a verbal and non-verbal communication of information. Using the “Visual Chief Concern” is an under-recognized, but useful way to help training doctors understand their patients, and make a correct diagnosis.

Take Home Messages

- Hand gesturing is critical in helping trainees make sense of “confusing cases”.
- Hand gestures often function to visually express the patient’s chief concern, adding information that cannot or has not been verbalized.
- It is critical to attend to hand gestures which are discordant with verbal messages.

Notes On Contributors
Dr. MacKinney is an associate professor in General Internal Medicine at the Medical College of Wisconsin (Milwaukee, WI). He teaches a course in bedside diagnosis.

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Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.