

Propagated Needle Sensation

by Charles C. Buck

Propagated Needle Sensation (PNS) is a subjective sensation which often follows the stimulation of acupuncture points. There is some evidence that the PNS also has an objective physiological basis in terms of electrical, electrochemical and other measurable changes. It occurs after Qi has been 'obtained' at the point (shown by feelings of numbness, soreness, distention or heaviness) and is usually felt by the subject to travel slowly along the course of the channel. Traditionally the appearance of PNS is closely linked to therapeutic success, and so methods of encouraging the sensation are an important part of needle technique. There is a saying in TCM that "Acupuncture is only effective when the Qi reaches the affected area". This has been verified by many recent researchers who have found a significant correlation between the degree of induced PNS and therapeutic success. This article is drawn mainly from the experiences of contemporary Chinese physicians summarised in the journals of TCM.

The PNS phenomenon has been known to Chinese medicine for a long time. It seems very likely that the pattern of channels and collaterals used today for acupuncture was originally mapped out by studying the course of PNS after stimulating various points on sensitive subjects. On a small percentage of the population it is possible to needle a point such as Zhiyin BL-67 and cause the PNS to travel the whole course of the channel. Because of its great importance in effective acupuncture therapy, the PNS has been much studied by modern researchers in China. Here are some of the findings:

- Identical propagated needle sensations can be induced by stimulating a variety of points at different body sites. Auricular points, head points and hand acupuncture points, in addition to conventional channel points on the limbs, may each elicit similar PNS in the corresponding channel.
- Typically, the PNS moves at between 2 and 10 cm/sec.
- PNS can be obtained in naive subjects with no knowledge of the course of the channels. The idea that suggestion might be involved in PNS induction has also been investigated and shown to have no significant effect.
- The Qi propagation effect is not limited to Chinese subjects. New Guineans, for example, were found to have a higher incidence of PNS than the Chinese themselves. The authors of this report suggested that this might relate to the warmer climate.
- A typical study of the incidence and degree of PNS gave the following results in 1019 cases:

No PNS	12.46%
PNS beyond 1 joint	22.37%
PNS beyond 2 joints	28.07%
PNS beyond 3 joints	23.94%

Exceeding 3 joints and further	6.58%
PNS along whole course of channel	6.58%

This report indicates that PNS can be elicited in almost 90% of the population.

- The incidence and degree of PNS usually rises throughout a course of repeated treatments.
- The PNS can be blocked by heavy pressure or low temperatures along its course. This inhibits therapeutic effects.

Although much of the research into channel phenomena has been based on the subjective sensation of PNS, some objective assessment has also been made. Changes in electrical resistance and potential, temperature and other changes can be measured when PNS is evoked. However, there is still some uncertainty as to whether the PNS has its physiological basis in the periphery or in the CNS appreciation of peripheral events. It seems likely that there are both central and peripheral components. Evidence in support of the involvement of central mechanisms is the observation that PNS can be induced in the missing limbs of amputees.

METHODS OF INDUCING PNS

Care, concentration and good needle technique are needed to successfully propagate the Qi sensation. If a number of points are used in the prescription, it is best to concentrate on one point for the induction of PNS. This should be on a channel which reaches the affected area and which has been implicated in the diagnosis. For eye diseases due to LIV disharmony, Guangming GB-37 may be selected for the propagation technique. In eye problems due to wind-heat Hegu L.I.-4 would be preferred. Because of the shorter distances involved, it is generally easier to persuade the PNS to reach the head or upper body using points on the upper limb. Similarly, leg points most easily affect the lower jiao. Channel substitutions can thus be made on the basis of the 'Six ding' pairings (e.g. L.I. channel in place of ST channel etc.), coupled with knowledge of the full jingluo pathways.

The needle is inserted in the normal way, perpendicularly for most points, and Qi obtained. According to the Xu-Shi nature of the disharmony, Bu or Xie techniques are applied (i.e. reinforcing or reducing techniques). It is helpful at this stage to get an idea of the type of Qi sensation the patient feels. There are a number of possibilities:

Suan: 'Sour' - an ache or soreness or cramping sensation similar to muscular fatigue.

Ma: 'Numbness'.

Zhang: 'Distention', a full, swollen sensation like the after effects of a dentist's injection.

Zhong: 'Heaviness', feels as if it would be very hard to move the limb.

Re: 'Heat' - a warm sensation, often accompanied by redness around the point.

The Qi sensation may change its character after a while or in response to continued stimulation. The Ma sensation often develops into Suan, while Zhong generally follows Ma or Zhang.

If, when trying to obtain Qi, there is pain instead, alter the direction and depth of needling, but if the pain persists, use the 'Nu' needle technique. Hold the handle firmly, bend the shaft gently and then shake the wrist and forearm with a rapid, small movement. This encourages correct Deqi. Flicking the needle handle can also help induce the arrival of Qi.

Having obtained Qi and applied reinforcing or reducing technique, the needle is withdrawn deftly so that the tip is in the subcutaneous tissues, and redirected along the channel in the appropriate direction. At the same time apply mild to moderate pressure with the thumb of the left hand on the channel behind the needle. The action of the left hand is very important. The pressure should not be excessive or a channel block may occur, or the pressure may stimulate strongly enough to send the Qi sensation in the wrong direction. The pressure can be applied so as to push slightly in the desired direction.

According to some authorities, the numb (Ma) sensation propagates best, soreness (Suan) is also more likely to give PNS than the other Qi sensations. If the sensation at the point is numbness, then the left hand may be pressed rather more strongly. If there is a distended sensation, then light pressure is more appropriate. It is important that the Deqi should remain after the needle has been redirected. If it soon fades, then Deqi should be obtained again, and again directed along the channel.

Manipulation continues with the needle directed along the channel. Reinforcing or reducing techniques are applied as indicated by the diagnosis - i.e. in Xu conditions use small amplitude, slow speed and light force for lifting and thrusting, and light flicking of the needle handle. In Shi conditions, large amplitude twirling, rapid speed, heavy lifting and thrusting, strong flicking etc. are used. These techniques encourage the PNS to move. PNS can also be encouraged by massaging along the course of the channel in the desired direction.

Some subjects have individual points which are particularly susceptible to Qi propagation. Often these are spontaneously tender (Ahshi) points. Generally it has been found that the best points for PNS are at channel crossing points (eg Sanyinjiao SP-6, Xuanzhong GB-39 etc.) or are points located near large joints (e.g. Shousanli L.I.-10, Yanglingquan GB-34 etc.).

If the Qi propagation stops near a large joint, strong traditional techniques for moving the Qi are known to be helpful. These are:

'Green Dragon Wags its Tail': with no rotation, lifting or thrusting, the needle handle is wagged from side to side a number of times. This is a Bu (reinforcing) technique.

'White Tiger Shakes its Head': the needle is rotated and thrust and then shaken when the patient exhales. Traditionally it moves the blood and is a Xie (reducing) technique.

'Green Turtle Searches for the Point': the needle is inserted slowly in three stages and withdrawn quickly. This is repeated, altering the direction of the needle slightly each time.

'Scarlet Phoenix Meeting the Source': the needle is repeatedly thrust first to the deep position, then raised to the superficial position, and finally thrust into the middle position. While this is being done, the needle is shaken back and forth and rapidly twirled.

(See: 'Acupuncture - A Comprehensive Text' for more detail on these techniques).

Another method of encouraging the Qi to propagate further involves needling the point where the sensation finishes, again using the PNS technique.

POSSIBLE ADVERSE REACTIONS

There have been some reports of patients' acute symptoms being aggravated when the Qi arrives at the affected area. Patients with coronary artery disease have been known to experience heart pain, chest stuffiness, shortness of breath etc. when the PNS reached the chest. Similarly, patients with gastric diseases may suffer acute nausea or an obstructed feeling in the stomach after needling. These adverse effects soon disappear on removal of the needles. Generally it is thought that the work is done when the Qi reaches the affected area, and so therapeutic results can still be expected despite apparent adverse effects. It may, however, be advisable to concentrate instead on using local and adjacent points, Back-Shu and Front-Mu points etc., if adverse reactions occur.