WHERE TO PLACE THE NEEDLES AND FOR HOW LONG?

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Introduction

I shall talk about two aspects of using needle: site and duration. Both are important but I shall spend most of the time on choosing the site since this is where we find most variability in recommendations.

Where to needle?

Newcomers to acupuncture generally spend a lot of time asking where they should place the needles. They often yearn for firm instructions about this; they want to be told that in disorder A you should put the needles in points x, y, and z, while in disorder B you should put them in points p, q, and r, and that provided you do this you should get the hoped-for results. There are numerous "cook books" available which purport to give this information. When the beginner attends an introductory acupuncture course he or she may get the impression that there is a a firmly established body of rather arcane knowledge which must be gradually acquired, so that becoming an expert acupuncturist is partly a matter of learning more and more acupuncture points with their specific properties and effects.

As time goes by, however, the aspiring acupuncturist is likely to find that this rather simplistic view of the matter doesn't correspond to what actually obtains. Different teachers of acupuncture have quite divergent ideas about how to choose which points to needle, as well as about the duration and intensity of needling and other matters. This can create a certain amount of confusion in the mind of the student.

Ideally, this should not happen. If there existed a body of well-established and generally accepted theory about acupuncture, clear implications for treatment would follow. Unfortunately, that is not the case at present. It is still possible for skeptics to maintain that acupuncture doesn't work at all except as a powerful placebo, and there is notoriously little valid scientific research to place against such views. Certainly there is almost nothing to show that any one method of practising acupuncture is indubitably better than the rest. Indeed, most relatively good-quality acupuncture trials seem to show a maximum response rate of about 70 per cent, no matter which treatment method is used; this tends to suggest that it may not make a great deal of difference in practice which of them you choose to
What I should like to do here is to review the main methods of choosing where to needle and then to propose a composite view which, I suggest, represents a reasonably satisfactory compromise among all of them.

Possible methods of selecting needling sites

1. Traditional Chinese Medicine (TCM)

Acupuncture, of course, originated in China. (Actually, even this seemingly uncontroversial statement may need to be modified; recent press reports suggest that the "ice man" whose 5000-years-old body was recently discovered in the Tyrolean Alps may have been receiving acupuncture for backache; if this is correct the origins of acupuncture may be even older than we thought but may not be exclusively Chinese.) TCM theory postulates the existence of numerous acupuncture points with specific effects. If this is correct, it follows that becoming a good acupuncturist must depend, among other things, on learning the properties of a large number of points. However, the evidence for point specificity is thin. Probably the best-supported claim is for the anti-nausea properties of PC 6. More recently research has appeared which seems to show that BL 67 can correct fetal breech presentations (though this trial used moxibustion rather than acupuncture). SP 6 does seem, on clinical grounds, to have some relation to the pelvic organs in women, though good research evidence is lacking here. Still, these are only three points out of some 360-odd described in the TCM literature: hardly enough to erect a complete system of treatment. And even the specificity of these seemingly well-established points is uncertain, given the notorious difficulty of devising suitable control procedures in acupuncture. At least some acupuncturists who started by practising in the traditional way have been led, by their experience, to disbelieve in the existence of acupuncture points as generally conceived. (Mann F. Reinventing acupuncture)

2. Neo-TCM

I use the expression "neo-TCM" to refer to a rather heterogeneous collection of treatments that have some kind of affinity with the traditional system but have departed from it in various ways. Examples of this include Ryodoraku, auriculotherapy, and scalp acupuncture. They generally retain the concept of "points" in some form and may also use a modified version of traditional pulse diagnosis; this is true, for example, of auriculotherapy. All these systems suffer from the same drawback as TCM; that is, they are largely unsupported by good scientific trials of their efficacy and basic assumptions.

The remaining methods of choosing where to needle are non-traditional; that is, they are attempts to reinterpret the basis of acupuncture in line with modern ideas of anatomy and physiology. In
principle, they ought to be able to provide acupuncture students with ways of choosing where to needle that are easier to accommodate within a scientific world view than that offered by TCM, and to quite a large extent this is the case; however, the danger is that by basing themselves too firmly on rather speculative theoretical foundations they may become too restrictive.

3. Segmental acupuncture

This depends on the idea that the phenomena of acupuncture can be explained in terms of the segmental representation of the body. Hence we have treatment based on charts of dermatomes, myotomes, sclerotomes and viscerotomes. The idea is intuitively appealing to an acupuncture modernist who wants to rationalize the procedure, but at the practical level it can be rather difficult to apply. One problem is that the segmental arrangement of the body itself, although undoubtedly correct in a general way, is not so fixed and clear-cut as the diagrams in textbooks might suggest. Another is that when segmental theory is applied to acupuncture a certain aura of vagueness and lack of precision begins to appear. Thus, treatment may consist in needling a local point at the site of pain, a distant point in the disturbed dermatome, myotome, or sclerotome. a point in a dermatome, myotome, or sclerotome related to an affected organ, a point in a related segment, or a point in an unrelated segment with a separate problem that is acting as an aggravating factor. (Bekkering R, van Bussel R. Segmental acupuncture, in Medical acupuncture.) The student could be forgiven for concluding that almost any combination of treatment points could legitimately be described as coming under the rubric of segmental acupuncture.

4. Trigger point acupuncture

Some acupuncture modernists make use of muscle trigger points (TPs) almost exclusively. These are areas that are painful when pressed and from which pain may radiate to distant sites. TPs may be found at muscle insertion sites, in the free borders of muscles, and also sometimes in their bellies, especially near their motor points. They may also be found in palpable taut bands in muscles and in fibrositic nodules. The presence of these TPs gives rise to what has been called the myofascial pain syndrome (to be distinguished from fibromyalgia, which generally does not respond well to acupuncture.) Studies have compared the distribution of known TPs with classic acupuncture points; there is a good deal of overlapping although the two are not identical.

5. Gunn's radiculopathy approach

Gunn has put forward an interpretation of acupuncture based on the hypothesis that all the disorders amenable to acupuncture are due to "radiculopathy". The theory holds that a peripheral nerve may appear normal and may continue to function, yet may cause a condition of "supersensitivity" in which the structures supplied by the nerve behave abnormally. Spondylosis is said to be the commonest cause of radiculopathy, and striated muscle is the structure most strongly
affected by the disorder; the muscle in question becomes contracted, painful, and afflicted by trigger points. Gunn maintains that acupuncture points are nearly always situated close to known neuroanatomic entities, such as muscle motor points or musculotendinous junctions. There are usually palpable muscle bands (trigger points) that are tender to digital pressure. These tend to be distributed in a segmental or myotomal pattern, in muscles supplied by both anterior and posterior primary rami. Needling these bands causes the signs and symptoms of radiculopathy to disappear.

Is there common ground?

If we look at the three "modernist" approaches to point selection that I have summarized above, we see that there is a fair amount of common ground among them. For example, the segmental theme reappears in Gunn's radiculopathy, as does the idea of TPs. There is also common ground with TCM, for at least some of the traditional acupuncture points could be reinterpreted as TPs. So should we perhaps try to amalgamate these views to provide a comprehensive "modernist" method of choosing where to needle? Below I propose a method of doing this, which I believe makes room for certain facts and observations which are otherwise difficult to accommodate.

What is missed out?

Anyone who has read a fair amount of material about the background of acupuncture will realize that the theories underlying the above non-traditional approaches to acupuncture, while they may be partially correct, are unlikely to be the whole story. For example, there is a lot of evidence to suggest that the midbrain periaqueductal grey plays an important role in pain transmission and perception, as does projection from the prefrontal cortex through the thalamus. (Bowsher D. Mechanisms of acupuncture, in Medical acupuncture). There is also the phenomenon of diffuse noxious inhibitory control (DNIC). This seems to be due to A-delta-generated information transmitted to the subnucleus reticularis dorsalis in the caudal medulla, which projects downward through the dorsolateral funiculus to the dorsal horn of the spinal cord at all levels; it can be activated by needle stimulation at non-acupuncture as well as acupuncture points. These observations suggest that theories about acupuncture based on putative changes in the muscles and peripheral nerves are not a wholly reliable guide to choice of needling sites.

At a practical level, Mann has contributed the use of periosteal needle stimulation as an additional acupuncture modality, and has also drawn attention to the existence of a subgroup of people ("strong reactors") who respond particularly well to acupuncture. He has also advocated the use of minimal stimulation ("micro-acupuncture") for some patients; a number of other medical acupuncturists have independently arrived at the same way of practising. In his most recent acupuncture book, "Reinventing acupuncture", Mann declares his disbelief in acupuncture points as conventionally understood. However, he avoids putting forward a theory of his own about how
acupuncture works, since he thinks this would be premature. I believe he is right to be cautious.

A theory-neutral way of practising acupuncture?

It seems to me that a great deal of what is written about acupuncture from the practical standpoint is over-prescriptive. In other words, it's not too difficult to say that someone is right, but hard to say that they are wrong (safety questions aside). Mainly for this reason I have developed what I take to be a theory-neutral way of describing the treatment I use. It is based on the following clinical observations:

- In some people, and for some disorders, it makes comparatively little difference where the needles are placed. (The DNIC phenomenon partly explains this although its effects are short-lasting).
- There appears to be a "generalized stimulation" effect, whereby a patient's sense of wellbeing can be improved and various disorders influenced by needling. Like DNIC, this can be non-specific; it can result from inserting a needle almost anywhere, although certain sites, e.g. LR3, seem to be especially effective in this respect.
- In other cases needling needs to be more or less specific, but the area of effective needling is very variable; it may be quite large (i.e. several centimetres in diameter or even more). TP acupuncture is sometimes of this nature, although at other times it seems to be necessary to needle the TP very accurately.
- It is sometimes possible to get a strong therapeutic effect from sites which are not noticeably tender to pressure. It is therefore incorrect to say that acupuncture is synonymous with the treatment of TPs.
- Periosteal needling (possibly a form of sclerotomal segmental acupuncture) is effective for joint problems.
- Needling or otherwise stimulating certain areas of the body will characteristically give rise to radiation to other areas. This phenomenon can be used therapeutically to influence disorders in those secondary areas.
- Minimalist acupuncture ("micro-acupuncture" -- Mann) is surprisingly effective in some patients and indeed is at times more effective than "standard" acupuncture.

New terminology

On the basis of these observations I have introduced a new term. I apologise for this, since I don't think we want more jargon than is absolutely necessary, but I don't find that any of the existing vocabulary expresses what I have in mind. I have therefore coined the term "Acupuncture Treatment Area" (ATA) to refer to possible sites of needle insertion.

An ATA may be defined as a site anywhere in the body at which

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needles may be inserted to produce a therapeutic effect, either locally or distantly.

ATAs may be of any size. Some are quite small, perhaps a centimetre or less in diameter, while others are much larger; indeed, the phenomenon of DNIC means that the whole body can be thought of as an ATA, since DNIC is, by definition, not confined to any single site.

The depth of ATAs is also variable. Some are deep within muscles or at the level of the periosteum, while others are near the surface (to explain the effectiveness of micro-acupuncture).

Some examples of ATAs

- A locally painful area may itself be an ATA; this is the simplest kind that exists. The "Ah Shi" points described in TCM are of this kind.
- Classic acupuncture points, if they exist, will be ATAs.
- Certain sites, such as LR 3 and probably LI 4, are classic acupuncture points but, I suggest, are best regarded as ATAs from which it is possible to produce a strong generalized effect.
- TPs are ATAs. (But note that the converse is not necessarily true; an ATA need not be particularly tender.)
- The periosteum around a joint is a (fairly poorly localized) ATA.
- For people who accept the validity of auriculotherapy, the outer ear is an ATA, which contains numerous mini-ATAs inside it.
- As noted above, the whole body can be thought of as a kind of macro-ATA.

Some particular ATAs that I have used frequently but which are not described in most traditional acupuncture texts

- Infratemporal fossa: deep needling here seems to be particularly effective for trigeminal neuralgia.
- Subcutaneous tissues of the lower abdomen: effective for a variety of gastrointestinal disorders, especially ulcerative colitis.
- A TP in the gluteal region, about 2 cm behind the greater trochanter of the femur: a major site for sciatica. This is close to GB 30 but not identical with it. There may be several ATAs in this area.
- The cervical articular column (Mann): effective for many disorders in the upper half of the body, including carpal tunnel syndrome.
- The infraorbital nerve can be used to treat facial hemispasm.

Advantages of the ATA concept

I would claim that introducing the ATA concept has a number of advantages.

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- It avoids the danger of getting tied prematurely to any particular theoretical framework, which may need to be modified or superseded as research in acupuncture advances.
- It allows for the introduction of new methods of treatment, since these are not obliged to conform to theoretical expectations.
- I think it is a true reflection of what most modernist acupuncture practitioners are actually doing, because they are generally more flexible in their practice than in their theory.

TERMINOLOGY

How are ATAs to be named? Some writers, e.g. Mann and Gunn, avoid using acupuncture terminology altogether, but the difficulty with this is that one may become involved in clumsy circumlocutions. I therefore favour an admittedly inconsistent approach. When an ATA happens to coincide with a standard acupuncture point I use that name. Thus I refer to LR 3, GB 21 and so on, even though I don't think one needs to needle these sites with the precision that the traditionalists insist on. Other sites don't correspond to traditional points and then I use anatomical terminology (gluteus medius site, sacroiliac joint, greater trochanter of femur, etc.)

ATAs in practice

If one accepts the idea of the ATA one is freed from over-dependence on dogma or "cookbooks". Acupuncture then becomes a matter of learning the common ATA locations and their characteristic radiation patterns, but at the same time remaining aware that these are only generalizations. Individual patients may and do present with ATAs which are different from those generally described but which can nevertheless be needled with good therapeutic results. Three examples among many:

- Facial myoclonus can often be relieved, at least temporarily, by needling branches of the infraorbital nerve as it fans out over the maxilla.
- Needling the cervical vertebrae is effective for some patients with carpal tunnel syndrome.
- Deep needling in the infratemporal fossa is helpful in about 60 per cent of patients with trigeminal neuralgia.

How long to needle?

This is an easier question to answer than where to needle, although as usual we encounter a variety of advice. Most traditional acupuncturists leave needles in situ for at least 20 minutes, often with intermittent manual stimulation. Non-traditional practitioners may do something similar but many prefer shorter periods of needling; electrical stimulation may or may not be used. At the extreme this becomes minimalist (micro) acupuncture, in which the needles are inserted for only a few seconds, but a more common practice is to leave the needles in for one or two minutes.
Beginners in acupuncture naturally find it difficult to believe that very brief insertion of needles can have much effect, but experience shows that it does. This is probably explained by the rapidity with which the nervous system habituates to a new stimulus.

There are undoubtedly some patients who will only respond clinically to brief insertion; more prolonged needling, paradoxically, does nothing in these cases. A number of people, me included, think that simply inserting a needle and then leaving it without any sort of stimulation, manual or electrical, for many minutes does little or nothing. On the other hand, if the needles are stimulated repeatedly during prolonged insertion there is a danger that some patients, especially those classified as strong reactors, may suffer adverse reactions. When a patient gives a history of feeling very ill after acupuncture it nearly always emerges that the needles had been left in for a long time.

My own practice is to use brief stimulation in nearly all cases. This means that needles are inserted for a maximum of about 2 minutes, often less. Manual stimulation may or may not be used. In some patients the needling can be much briefer than 2 minutes; in strong reactors and in children it is enough to insert and withdraw the needle almost simultaneously, so that total needling time is about a second. Periosteal needling is a strong form of treatment and is often uncomfortable for the patient. It is therefore always done briefly (1-5 seconds).

The main exception to this is patients who have become accustomed to prolonged insertion and are convinced that this is essential. I think myself that this is a psychological effect but if the patient is convinced of it there is no point in entering into a dispute, so in such a case I have used prolonged needling but without repeated stimulation.

In very rare cases I have used prolonged stimulation over several days, with a stud needle stimulated electrically via a TENS pad. One patient, for example, was a woman with repeated unexplained abdominal pain who responded to stimulation at a point on the auricle (not corresponding to a Nogier chart point); another was a woman with repeated severe vomiting who responded to stimulation at PC 6. However, I think this should only be done on in-patients because of the risk of infection.

**Summary and conclusions**

As already noted, dogmatic statements about these matters are out of place. I therefore favour an eclectic method of choosing the sites to needle, based mainly on typical patterns of sensation referral, together with the use of local needling over painful areas in some cases. Some patients also respond non-specifically to needling: a generalized stimulation response. I suggest the term Acupuncture Treatment Area (ATA) to describe the sites used. As for duration of needling, I favour using the least amount of stimulus that will produce a response; this is nearly always less than one expects. This means that needling should

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be brief (1-2 min or less in nearly all cases).

References


