Acupuncture and pain
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The authors review the basic pain
mechanism, emphasizing the causes of
pain associated with malignancies
and their treatment. In the article, they
explain the technique of acupuncture
for analgesia and highlight four case
reports taken from a study performed
at the Roswell Park Memorial Institute
in Buffalo, New York.

Since our work involves alleviation of
pain, the Anesthesia Department is often
consulted for suggestions as to the least
toxic, most effective treatment for pain
relief. Because of the publicity that acu-
puncture has received, it is one subject
on which anesthetists can expect to be
consulted. We hope that some of our
experiences in this area may help nurse
anesthetists encountering similar situa-
tions.

Pain is unique in the spectrum of
sensory experiences. It is unpleasant but
not easily defined. However, it has iden-
tifiable terminal points, a measurable
intensity, and a describable stimulus. It
is also a complete private sensation sig-
ificantly altered by the patient's emo-
tions and reactions.

The traditional explanation of the
pain mechanism is "pain fiber" stimula-
tion with subsequent activation of a
CNS "pain pathway". But, this concept
does not account for all the dimensions
of the pain experience and has probably
led to an oversimplified and limited view
of its treatment.

Pain involves a very different con-
cept for every individual, but it is be-
lieved to consist of two components:
(1) the original sensation, and (2) the
psychological modification of the origi-
nal sensation. These are called the per-
ception component and the reaction
component.

The original sensation that travels
over pain pathways is presumably the
same for all individuals and depends
chiefly on the intensity of stimulation,
but becomes individualized before per-
ception emerges into consciousness. The
reaction to sensation is determined by
such factors as past experiences, condi-
tioning, memory, judgment and the
present meaning of pain. The reaction
is not the same for any two people and
not exactly alike for the same individual
at different times. The threshold of re-
action to pain varies widely with the
different personalities.

Pain is classified into acute and
chronic types. Here, we are concerned
mainly with chronic or continual pain.
This may begin gradually and persist
or recur indefinitely.

Pain of malignant disease is a com-
mon type of chronic pain. It can be
cased by one of the following mech-
anism:
1. Compression of nerve roots,
trunks, plexuses by tumor, or fracture
of bones weakened by metastases. This
cases neuropathy with sharp, well lo-
calized projected pain typical of neural-
gia.
2. Infiltration of nerves and blood
vessels by tumor cells causing perivascular and perineural lymphangitis with irritation of sensory nerve endings and diffuse burning pain—sympathetic pain.

3. Obstruction of a viscus, causing visceral pain.

4. Partial or complete occlusion of blood vessels by adjacent tumor causing venous engorgement or arterial ischemia with accompanying pain.

5. Infiltration by tumor of tissue invested by fascia or peritoneum.

6. Necrosis, infection, and inflammation of pain sensitive structures by a contiguous tumor.

Of course, treatment designed to eradicate the disease is the ideal way of treating the pain. But, treatment of the pain is usually necessary either on an acute or chronic basis.

This has been accomplished with narcotic or non-narcotic analgesics, psychological techniques, neurosurgery, nerve blocks, intrathecal cold saline instillation, hormones, endocrine gland ablation, irradiation, and bio-feedback. Acupuncture has also been said to provide symptomatic relief.

Since other analgesic modalities sometimes fail to provide relief or eventually produce patient tolerance in the chronically ill, it seems worthwhile to determine whether acupuncture can relieve cancer pain. The American Cancer Society sponsored such a study in 1973 at the Roswell Park Memorial Institute in Buffalo, New York. Nurse anesthetists had the opportunity of observing these treatments.

The word acupuncture is derived from the Latin acus, the needle, and punctura, a pricking. Acupuncture is a form of ancient medical practice in the Orient which involves insertion of needles and manipulating them to provide a stimulus in treatment of disease. The results in treatment of disease are open to question and serious discussion. Modern medical therapy is a more certain way to treat disease. In the area of analgesia, reports from China seem to indicate that acupuncture techniques might have value.

In the studies carried out at the Roswell Park Memorial Institute, only patients who could not obtain relief by other means were selected. Several techniques were evaluated. One involved palpation of the most tender points, inserting needles, and stimulating them with a mild intermittent electrical stimulus. This resembles percutaneous peripheral electrical stimulation treatments which have been under investigation and use in many pain clinics in this country for several years.

The other method tested involved insertion of needles in acupuncture points far from the pain site as indicated in the acupuncture atlas. The needles were manually twirled or electrically stimulated.

**Actual case studies**

Several case histories follow with the treatment selected and the results obtained.

Patient number 1 was a 67-year-old white male with thrombocytopenic purpura and hypertension. He was receiving chemotherapy, steroids, diuretics, and anti-hypertensives as treatment. This patient developed right hip pain with radiation down the right leg that was relieved by Tylenol® and Darvon®. X-rays taken revealed osteoporosis with vertebral collapse at D5 and L4. Myelogram did not reveal cord compression.

As his disease progressed, methadone was needed to produce temporary effective pain relief. Because of the increased analgesic requirement and decrease in its effectiveness, acupuncture was considered.

The patient received seven acupuncture treatments. Electrical stimulation was applied to needles placed at the points of maximum tenderness and Chinese classical acupuncture points. The patient obtained greater than 50% relief of pain after the second treatment. After the seventh treatment, pain was reduced to a tolerable level for five weeks. It then gradually returned to the initial level.

Patient number 2 was a 59-year-old white man with bronchogenic carcinoma involving the right bronchus. He was receiving chemotherapy and radiation therapy for bone pain in the lumbar region.

Electrical stimulation was applied to a needle inserted in the Shu point (Sp 4) of the right lower leg. The patient reported significant relief of bone pain for two weeks, after which the pain returned. He then requested acupuncture treatments.

The patient received seven treatments over a period of three weeks. After the fourth treatment, pain was reduced to a tolerable level. The patient requested no further acupuncture treatments and was discharged from the pain clinic.
old male with adenocarcinoma of the prostate and wide spread metastasis. Treatment included orchiectomy, chemotherapy, hormones, and bilateral adrenalectomy.

He subsequently developed low back pain with weakness in both legs. X-ray showed osteometastasis. Large doses of narcotics provided analgesia of short duration, but made him constantly lethargic. Electrical stimulation was applied to acupuncture needles inserted at points of greatest tenderness and bracketed with needles inserted one dermatome above and below each point.

Treatments continued daily for seven days. After the third treatment, the patient obtained adequate relief from pain with two Darvon® 65 mg capsules every eight hours. This medication was effective for two months. The patient presently uses one Percodan® when necessary for pain.

Patient number 3 was a 26-year-old male with the diagnosis of seminoma (embryonal cell cancer). He had been treated with bilateral orchiectomy, nephroureterostomy, and chemotherapy. He developed severe abdominal and middle back pain in the upper lumbar and lower dorsal areas. No appreciable relief was obtained from Percodan®, Talwin®, codeine, Dilaudid®, morphine, Demerol®, Thorazine®, either alone or in various combinations.

This patient was referred to our department for treatment of excruciating back pains. He was pale, diaphoretic, and in obvious distress. Acupuncture needles placed in appropriate areas in the back (from 9th thoracic to 4th lumbar area) were stimulated electrically. Slight relief occurred after the first treatment. Complete relief for 8 hours followed the second treatment. The third treatment gave complete relief for the remainder of his life (6 weeks).

Patient number 4 was a 57-year-old female with cancer of the cervix. She came to us two months after having a total abdominal hysterectomy with complaints of low back and right leg pain. Two Percodan® tablets every four hours and methadone had been tried for pain relief without success.

She consented to electroacupuncture, which relieved her pain completely after two treatments. She received a total of seven treatments. Following these she only required 65 mg Darvon® every 12 hours for analgesia.

After two months, she began to suffer left leg pain. Two more treatments were administered without relief, and this patient elected to discontinue treatment.

Conclusion

We have described several of our successful results with acupuncture. However, we have also experienced failures. Of our patients treated, 5% did not experience any relief from their pain. Some patients were only able to experience poor to fair results from our treatments.

We still do not know the exact mechanism of action of acupuncture. Much more clinical experience must also be gained before we can determine its success as an analgesic.

AUTHORS

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