

BEE VENOM THERAPY FOR CHRONIC PAIN*

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HISTORY

FIRST REPORTS ABOUT THE USE OF BEE VENOM date back to the last century. In German literature & also in several Eastern European countries are found anecdotal reports mostly about bee-keepers who had been accidentally stung by a large number of bees. These people observed, subsequently, that their longstanding previous pain from arthritis of their knees, hips or other arthritic joints, disappeared after the stings & for long periods of time. When the arthritic pain reappeared, these bee-keepers would expose themselves again to these bee-stings with similar pain relief & success. This led to the first scientific studies about the use of bee stings in the treatment of pain.

The pioneer in this field was a German physician, Dr. Bodog Beck, who, in 1935, published the first comprehensive book on the subject entitled "Bee Venom Therapy." In 1939, his experiments were repeated here in the USA. Unfortunately, these experiments were done with bee venom prepared by the pharmaceutical firm Merck, who ground up whole bees, filtered the product & used the resultant fluid for their experiments. The astounding healing effects of bee venom that Dr. Beck documented in his book, could not be repeated with this Merck "venom" product & bee venom therapy became forgotten.

Several decades ago, however, a beekeeper in Vermont, Mr. Charles Mraz, developed, an elegant apparatus designed to extract pure bee venom from bees without actually killing the bee. In this device, the bees were shocked with a 12-volt current &, in response to this shock, the bee stung a rubber membrane, behind which the excreted venom was collected.

The venom was then dried, mixed with a solvent & distilled. This made an injectable bee venom product with effects which were indistinguishable from bee venom proper.

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Mr. Mraz's bee venom is still available to private practitioners & is used by several drug companies for sale to allergists (for desensitization purposes).

Mraz's bee venom was studied 20 years ago by a Naval biochemist (William Shipman of the Biological & Medical Sciences Division, U.S. Naval Radiology Defense Laboratory, San Francisco, California). Since then, a number of physicians have used bee venom in the treatment of chronic pain here in the United States.

The practitioner with the largest experience in treating pain patients with actual bee stings is Mr. Mraz himself. He has treated several thousand people over a 50-year period. Mr. Mraz ("Charlie") is still alive & has a flourishing bee product business in Vermont.

A similar development has taken place in the Eastern Bloc countries where the treatment of pain with bee venom injections is very well accepted & practiced extensively. Most well known for his work in the biochemistry, pharmacology & toxicology of bee venom is Professor Stephan Shkenderov, Director of the Institute for State Control of Drugs, Biochemistry Department, Sophia, Bulgaria.

TECHNIQUE

The treatment of chronic pain with bee venom is simple. The venom is injected strictly intracutaneously. The venom is drawn up in a tuberculin syringe & mixed 50:50 with a local anaesthetic (0.1 cc equals the amount of bee venom in the "natural" bee sting). The bee venom is then injected into the tender spots surrounding an inflamed joint, & is also injected into trigger & acupuncture points. Before the first treatment, a test injection of 0.1 cc of bee venom is given. If, after 20 minutes, no systemic allergic reaction occurs, another 0.3 cc of bee venom is delivered, but distributed into the patient's painful 3 areas. This treatment should be given every day or every other day. Each day the dosage of bee venom can be increased by 0.2 cc (= 2 injections).

**TABLE I
 BEE VENOM THERAPY RESULTS**

| <u>Diagnosis</u> | <u>Number of Patients</u> | <u>Worse</u> | <u>Unchanged</u> | <u>Mildly Better</u> | <u>Good Results</u> | <u>Excellent Results</u> |
|--|---------------------------|--------------|------------------|----------------------|---------------------|--------------------------|
| Gout | 5 | | | | | 5* |
| Rheumatoid Arthritis (seropositive) | 10 | 1 | 1 | | 6 | 2 |
| Rheumatoid Arthritis (seronegative) | 5 | | | | 4 | 1 |
| Fibromyalgia (with elevated ESR) | 7 | | 1 | | 2 | 4 |
| Sprain/strain Cerv. Spine | 21 | | | 1* | 4* | 16* |
| Sprain/strain Lumbar Spine | 22 | | 4* | 2* | 5* | 11* |
| Disc Injury, Neck | 8 | | | 1* | 4* | 16* |
| Disc Injury, Lumbar | 13 | | 2* | 3* | 4* | 4* |
| Post-laminectomy Pain | 6 | | 1 | 1 | 3 | 1 |
| Arthritis Small Joints Hand | 9 | | 1 | 2 | 2 | 4 |
| Painful Bunion | 6 | | | 1 | | 5 |
| Post-Herpetic Neuralgia | 4 | | | | 1 | 3 |
| Fracture Nonunion Navicular | 1 | | | | | 1 |
| Intractable Pain from Large Burn Wound (after skin grafting) | 1 | | | | | 1 |
| Orteoarthritis Knee | 2 | | | | 2 | |
| Ankylosing Spondylitis | 2 | | | | 2 | |
| Vertigo | 5 | | | | 3* | 2* |
| Multiple Sclerosis | 1 | | | | 1 | |

Footnote: Asterisk (*) indicates that those patients had other significant treatment modalities.

**TABLE II
 BEE VENOM THERAPY: BIOCHEMICAL ANALYSIS**

| <u>Fraction:</u> | <u>Action:</u> | <u>Effect on Pain/Painful Joint:</u> |
|--|---|--|
| Hyaluronidase & Isoenzymes | Depolymerizes hyaluronic acid (the "glue" of the body) | Allows other components of Bee Venom to penetrate deep into tissues, inside cells, inside joint. |
| Compound X (W. Shipman) | Lowers surface tension of all fluids (Surfactant) | "Wets" cell walls with Bee Venom, allows better penetration. |
| Phospholipase A | Converts lecithin (cell wall) into lysolecithin. Lyso-lecithin acts as emulsifier, causes hemolysis in high doses. Most toxic component of Bee Venom. | Emulsifies debris within joint & other tissues, increases local pain (for 10-15 minutes): counter-irritant. |
| Melittin | Stimulates ACTH-secretion in the pituitary (Cortisol). Protects lysosomal membranes. Powerful antibacterial agent. Causes lysis of mast cells. Strongly kationic. | Strong anti-inflammatory effect (long-acting). Short-acting histamine effects: increased capillary permeability, edema, temperature elevation, itching pain, increased vitality & sense of well-being; forces Bee Venom to attach to negatively charged cell wall. |
| Apamin | Stimulates central secretion of serotonin & dopamine. Blocks neurosynaptic processes in periphery. | Increases central & peripheral pain threshold; decreased pain, increased sense of well-being. |
| Mast cell degenerating protein (Haberman) | Strong anti-inflammatory action (approximately 100 times more than hydrocortisone) | Reduces inflammation & pain through local action on tissue inflammation. |
| <i>Other components:</i> | | |
| Acid phosphatase, α-glucosidase, phospholipase B, several peptides | Inhibition of: complement, kinines proteases, substance "P", & other effects. | Anti-inflammatory, Pain reducing. |

"Technique", *Continues*):

I have never given a dosage higher than 3 cc of bee venom (i.e.: 30 "bee-stings"). Treatment of an inflamed bunion or small joint of the finger rarely requires more than 2 to 3 sessions. In rheumatoid arthritis, treatment commonly requires about six weeks. After 6 weeks, most of the rheumatoid cases that I have seen go into remission. Several months thereafter, typical exacerbations of the RA occur which are easily treated with a small number of further bee venom injections.

Table I gives an overview of the patients I have treated. The asterisk behind some numbers indicates that these patients had other significant treatments such as injections of proliferants in ligaments & epidural injections. No steroids have been used on any of these patients. Table I demonstrates the amazing pain-relieving properties of bee venom injections.

BIOCHEMICAL ANALYSIS

The dramatic effect of bee venom is quite easily explained through the electrophoretic analysis of its ingredients. Table II shows the breakdown of the chemical components contained in bee venom. The most interesting aspect of bee venom is that it has both local actions & systemic effects. Locally, bee venom has strong anti-inflammatory effects & also a strong action on the nociceptive system (this is the part of the nervous system that is responsible for the transmission of pain impulses). The central action of bee venom involves stimulation of the pituitary gland, which leads to increased ACTH secretion & subsequent elevation of plasma cortisol levels (through adrenal cortex stimulation). Bee venom also leads to elevated levels of serotonin & dopamine. The combined effect of the central actions is therefore anti-inflammatory & pain-reducing. Central stimulation is most likely also the cause of the general increased sense of well-being of those patients whom I have treated with bee venom.

DIETARY SUGGESTIONS

Since injections of Bee Venom stimulate the pituitary & adrenal cortex glands, the bio-demand of certain vitamins increases. The pituitary requires riboflavin to synthesize ACTH. The adrenal cortex require ascorbic & pantothenic acids to be able to respond. Our results with Bee Venom have dramatically improved since we have added these ingredients to our therapeutic regimen. Since riboflavin should always be given in a fixed ratio with pyridoxine HCl, we also supplement pyridoxine.

SIDE-EFFECTS

With the above-described regimen, I have not seen one systemic allergic reaction in over 4 years. I have treated a number of patients who stated they were highly allergic to bees. Some of them had been treated in emergency rooms for anaphylactoid shock. I have not treated patients with Bee Venom who had allergies to the substance proven by an allergist. I assume the reason for the lack of anaphylactic reactions in my series is to be found in the fact that my Bee Venom has been diluted with local anaesthetic & also the fact that the Bee Venom is given in a safe environment with minimal sympathetic arousal of the patient.

The bees of Mr. Charlie Mraz have stung several thousand customers in over a 50 year period. He states that severe allergic reactions have been extremely rare. However, Benadryl & epinephrine should be readily at hand in case of such allergy. According to Bulgarian research, the lethal dose of Bee Venom is several thousand time above the dosage commonly used in the treatment of humans.

Bee Venom therapy is therefore an *extremely safe treatment*. Adverse long-term effects have not been found.

OUTLOOK

I have been using the full armamentarium of modern-day pain management procedures in my office, including epidural injections, proliferant therapy (prolotherapy), acupuncture, manipulation, ear-acupuncture, phenol nerve destruction, nerve destruction through freezing, hypnosis, trigger point injections & many others. Treatment with Bee Venom injections (which could also be called "trigger point injections with Bee Venom") is clearly filling an important gap in my therapeutic armamentarium.

Any physician treating chronic pain-suffering patients should be at least familiar with the use of Bee Venom. Bee Venom seems to work extraordinarily well in situations where other methods have failed, especially in arthritic conditions. Clinical studies (phase II studies) have been, up to today, not performed in this country & are urgently needed.

Since 1978 we have the "American Apiotherapy Society" which is a small, but contains a very active group of physicians, beekeepers & other interested people. The telephone number for further information is (201) 842-5700. For treatment protocols, please contact my office at (505) 988-3086. ■



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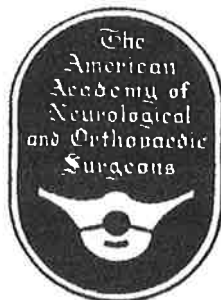
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