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The Effect of the "Laying On of Hands" on Transplanted Breast Cancer in Mice

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Abstract—After witnessing numerous cases of cancer remission associated with a healer who used "laying on of hands" in New York, one of us (W.B.) "apprenticed" in techniques alleged to reproduce the healing effect. We obtained five experimental mice with mammary adenocarcinoma (code: H2712; host strain: C3H/HeJ; strain of origin: C3H/HeHu), which had a predicted 100% fatality between 14 and 27 days subsequent to injection. Bengston treated these mice for 1 hour per day for 1 month. The tumors developed a "blackened area," then they ulcerated, imploded, and closed, and the mice lived their normal life spans. Control mice sent to another city died within the predicted time frame. Three replications using skeptical volunteers (including D.K.) and laboratories at Queens College and St. Joseph's College produced an overall cure rate of 87.9% in 33 experimental mice. An additional informal test by Krinsley at Arizona State resulted in the same patterns. Histological studies indicated viable cancer cells through all stages of remission. Reinjections of cancer into the mice in remission in Arizona and New York did not take, suggesting a stimulated immunological response to the treatment. Our tentative conclusions: Belief in laying on of hands is not necessary in order to produce the effect; there is a stimulated immune response to treatment, which is reproducible and predictable; and the mice retain an immunity to the same cancer after remission. Future work should involve testing on various diseases and conventional immunological studies of treatment effects on experimental animals.

Keywords: mammary cancer remission — cancer remission — healing — laying on of hands — healer — alternative medicine.

Introduction

Researchers who have studied psi phenomena in general and healing in particular have been plagued by the apparent unreliability of the phenomena. Added to this problem are unresolved questions of the role and necessity of belief, and the question of whether subjects can be taught to produce significant effects. Our research on healing addresses these issues and appears to present a reliable and potentially efficacious production of healing taught to, and produced by, nonbelieving subjects.

Previous Research

There is a growing body of research into what has been variously termed "anomalous" or "paranormal healing," "healing with intent," "spiritual healing," "Therapeutic Touch," and "laying on of hands," to name but a few. There are by now so many terms used interchangeably that some researchers do not even distinguish among them (Bunnell, 1999). Compilations of controlled studies (Benor, 1992; Murphy, 1992) often cluster previous work by the subject of the intended healing. Benor (1992), for example, discusses healing action on enzymes, cells in the laboratory, fungi/yeasts, bacteria, plants, single-cell organisms, animals, electrodermal activity, and human physical problems among the areas that have been submitted to controlled scientific study. And although some studies in each of these areas have produced significant results, they are nevertheless dogged by unresolved questions of reliability.

Benor (1992) reports that psi phenomena in general tend to be demonstrated only in the first series of experiments but not in attempted replications. In healing research, for example, Snel (1980) reported significantly inhibited growth of mouse leukemia cells in tissue culture, but not on attempted replication. Even thoroughly studied and practiced healer Oskar Estebany has shown an inability to reproduce significant effects of trypsin in vitro when he was personally not at ease (Smith, 1972). Healers are reported to be unable to produce sufficiently consistent results, frustrating some researchers into claiming that it is virtually impossible to establish a repeatable experiment in which healing occurs in the same combination more than once (Benor, 1990). And because healing does not conform even statistically in regularly repeatable fashion, skeptics can argue that claims for healing efficacy probably present chance variations, rather than responses to healing treatment (Benor, 1990).

The question of the role of belief in producing psi phenomena has also been debated. The well-known sheep-goat effect (Schmeidler, 1945; Schmeidler and Murphy, 1946; Palmer, 1971) does not seem to carry over consistently into healing. Many presume that some sort of faith is a requisite for positive results in healing, and some even argue that skeptical observers may inhibit the effectiveness of the treatment (Benor, 1990). But there is not agreement on the issue. Grad (1961) found that skeptical medical students treating cages of mice produce slower healing than the untreated control group. On the other hand, Krieger's study of Therapeutic Touch (1979) found that belief in the effectiveness of healing does not affect its success.

There is also disagreement about whether healing can be taught or whether it is entirely an innate ability. Reviewing some biographies of well-known healers, Benor (1992) notes that the Russian healer Yefin Shubentsov believes it is a physiological process that can be taught to anyone. Dolores Krieger's Therapeutic Touch method claims that to become a healer, a person must have clear intentions, motivation to help, and an ability to understand personal motivation for wanting to heal. On the other hand, both Oskar Estebany and Olga Worrell felt that healing could not be developed by study. Experimentally,

though, Nash (1980, 1984) found that subjects not known to be healers could be taught to significantly affect the growth of bacteria in cultures.

Our research addresses these issues of reliability, belief, and "teachability" in healing experimental mice, and by extension, the question of the efficacy of healing is raised.

Certainly all healing work in experimental animals must acknowledge the pioneering work of Grad (1961, 1965, 1976), who set the stage and the standards for work in this area. In the first controlled experiments, Grad studied the Hungarian healer Oskar Estebany's ability to accelerate the healing rate of mice with one-half by one-inch wounds. Estebany held the cages of mice twice daily for 15 minutes. The treated group healed significantly more rapidly than the untreated group (Grad, 1961). Grad also induced goiters in mice by feeding them an iodine-deficient diet (Grad, 1976). The thyroid glands of mice treated by a healer twice daily for 15 months grew significantly more slowly than those of the control mice. This effect was also obtained when Estebany did not treat the mice directly with his hands, but instead held in his hands cotton cuttings, which were placed in contact with the mice in the cages.

There has been little work done in the area of cancer in live animals. Onetto and Elguin (1966) experimented in inhibiting tumor growth in mice that had been injected subcutaneously with a tumoral suspension. They found the area, weight, and volume of tumor growth in one group of 30 tumorigenic mice was significantly less than that of 30 untreated control mice. Interestingly, a second group of 30 mice was treated in an attempt to increase tumor growth, but these mice did not differ from the control mice.

Null (1981) gave 50 healers two mice each to screen for their ability to prolong the lives of mice injected with cancer cells. Only one healer produced total tumor regression in one of his mice, and the other survived longer than predicted. The one successful healer was then asked to twice replicate the healing on 10 mice. The healer was able to extend the average survival of the treated mice to a statistically significant number of days beyond that of the control group (Grad, 1976).

The Present Research

Our research grew out of an attempt to empirically test a New York-based healer. This individual claimed that without the benefit of study or training, he was naturally able to perform psychometry, or token object reading, as well as healings by laying on of hands. Over the course of several years, Bengston watched hundreds of people being treated for conditions covering a wide range of afflictions. Some conditions such as long-term diabetes seemed to respond slowly while others such as cancer appeared to respond almost immediately.

Among the most interesting observations was that the entire process did not involve belief of any sort. The person being healed was not asked to believe in anything, and *the healer himself did not espouse belief.* Truly, the healings could be considered "faithless" on the part of all concerned. Anecdotally, it

appeared that nonbelievers responded more dramatically than believers. Conventional medical tests determined the success or failure of treatment.

Over the course of months of questioning by Bengston about the process by which the healer was able to treat others, techniques were developed wherein the healer claimed that complete skeptics could be trained to reproduce healing effects. The techniques did not involve belief of any sort, nor did they include meditation, focused visualization, spiritual discipline, or lifestyle changes. The initial techniques involved a series of routine mental tasks that were not directly intended to produce healing. Subsequent to mastery, these would be followed by laying on of hands. The mental techniques required several weeks of practice to achieve sufficient mastery to move to the laying on of hands techniques.

We wanted to test the authenticity of the healings in a rigorously controlled setting that would allow for completely unambiguous results. For obvious reasons, "clinical" work with humans involves less than ideal conditions, so we asked the healer if he would come into a laboratory and attempt to treat laboratory animals. He initially agreed, but just before the start of our experiment, he refused to participate. At that point, Bengston, who had apprenticed the longest and spent the most time learning the techniques, reluctantly became the first experimental healer.

Methods and Data

The First Experiment

Krinsley was a professor at Queens College of the City University of New York. He had arranged for a disinterested professor of biology who was doing conventional cancer research to prepare experimental animals. Her area of expertise was mammary cancer, so she was familiar with mammary adenocarcinoma and obtained from The Jackson Laboratory a "standard" mammary adenocarcinoma (code H2712; host strain C3J/HeJ; strain of origin C3H/HeHu). The normal progression after the mouse is injected is the development of a nonmetastatic palpable and visible tumor that grows so large that it crushes the internal organs of the host. Host survival in the conventional literature was 100% fatality between 14 and 27 days after injection.

The experimental procedure was planned as follows: Bengston was to place his hands around the outside of a standard laboratory plastic cage containing six mice for 1 hour per day while applying the healing technique, beginning 3 days after injection. At no time were the mice to be directly touched. Six control mice were kept in a separate laboratory in the same building. One experimental mouse died of natural causes before treatment began, so only five mice were actually treated. Our initial hope was that we might get a significant difference in survival between the experimental animals and their controls. Remission was not seriously considered.

Our results were totally beyond expectation. About 10 days into the procedure, the experimental mice began to develop a "blackened area" on their tu-

Fig. 1. Typical mouse 14 days after injection.

mors (Figures 1 and 2). At this point, Bengston presumed that the experiment was failing and wanted to call it off. Krinsley convinced him to continue, reasoning that there was nothing to lose. Approximately 1 week later, the blackened areas "ulcerated" as if they had been split open (Figures 3 and 4). In some

Fig. 2. Twenty-two days after injection.

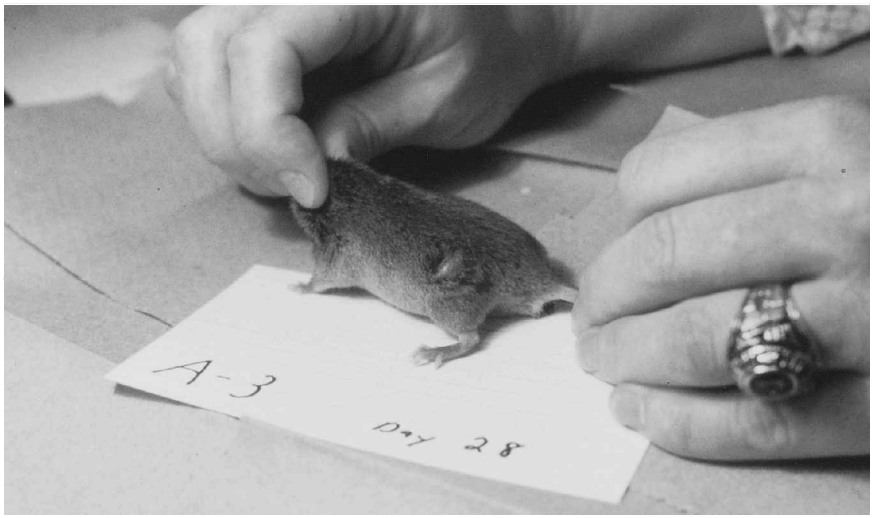

Fig. 3. Twenty-eight days after injection.

cases, the ulceration grew extremely large (Figure 5) then appeared to implode (not shown), and the wound closed. The mice then lived their normal life span of approximately 2 years. In the figures, the index card notation "A-3" identifies the mouse, and the day number indicates elapsed time since injection. In

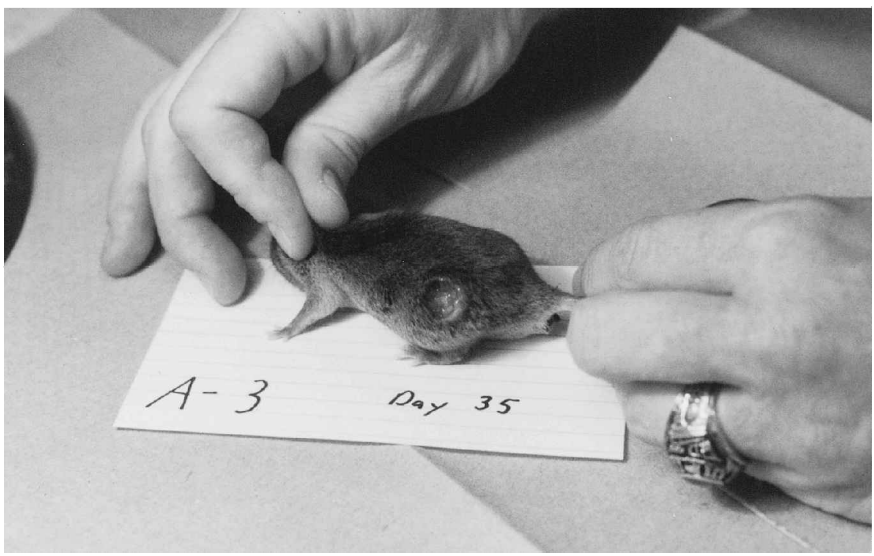

Fig. 4. Thirty-five days after injection.

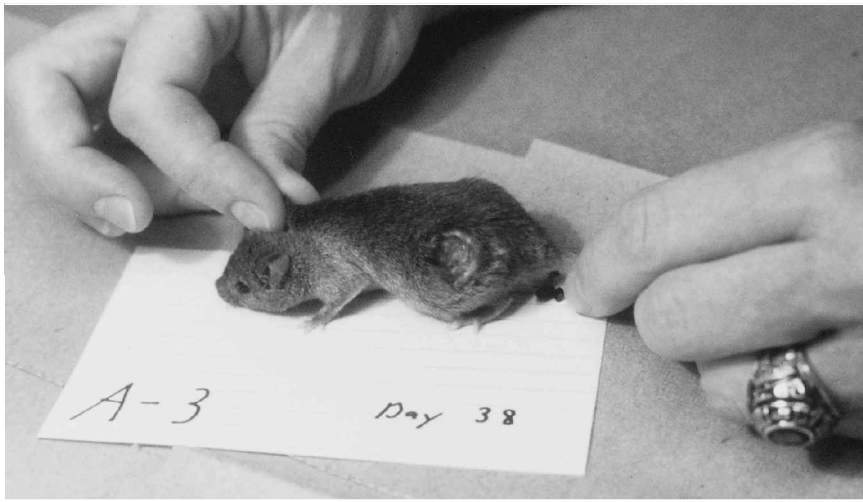

Fig. 5. Thirty-eight days after injection.

Figure 1 (Day 14), the tumor is visible on the left posterior dorsal aspect of the mouse.

On Day 22 (Figure 2), the tumor is clearly larger but has developed an encrusted area on its surface (most posterior aspect of the tumor). This is the earliest indication of tumor regression.

Days 28, 35, and 38 (Figures 3 through 5) illustrate the next significant stage. The tumor appears to be resorbed internally and remains clear of infection. From this stage on, the tumor regresses completely (not shown), and the mouse lives its normal life span.

The control mice presented us with some unique challenges. In the initial stages of developing the experimental procedure, the healer warned that he could not be near or see the control mice, or they, too, would go into remission. Although skeptical, we agreed to keep the control mice in another laboratory. When Bengston became the substitute healer, we relaxed this protocol. After two control mice had died "on schedule"—that is, between 14 and 17 days after injection—Bengston went to see the remaining four. They exhibited normal tumor progression patterns and were obviously in the last stages of the disease. However, after Bengston observed the four control mice in their cage, several days later, they too developed the blackened area, the tumor ulcerated, and the mice went into full remission, although they lagged behind the regularly treated experimental mice in remission rate.

The Second Experiment

The results of our first experiment clearly amazed and confounded us, and we immediately set out to replicate the procedure. Krinsley offered to try the tech-

nique, and he solicited a skeptical faculty volunteer from Queens College who had neither belief nor experience with any sort of paranormal phenomena. Bengston approached a half dozen students at St. Joseph's College to act as volunteers and selected the two most skeptical students to serve as healers. The two students also had no previous experience with anomalous healing phenomena, did not believe in the legitimacy of healing, and reported afterward that they believed Bengston was actually conducting a study on student gullibility.

Bengston trained the four volunteers for several hours once a week for 6 weeks. Between training sessions, the volunteers were assigned practice mental tasks. Each volunteer was then given one cage with two mice. One experimental mouse died of natural causes 2 days after treatment began, reducing the actual number of experimental mice to seven. There were six control mice in an adjacent laboratory in the same building.

All seven experimental mice developed the remission pattern and lived their normal life span. Without our knowledge, and despite warnings to not do so, after two control mice had died, the faculty volunteer at Queens College began daily observations of the remaining four. All four of the remaining control mice then went into remission.

The Third Experiment

This experiment produced the most puzzling results. We moved the study to the Brooklyn campus of St. Joseph's College, where we convinced Carol Hayes, the extremely skeptical chairperson of the biology department, to perform the procedure. She agreed as long as she could pick some volunteers. She selected three undergraduate biology majors; Bengston selected two volunteer healers: one undergraduate sociology major and one child study major. As in the second experiment, all participants had no previous paranormal experiences and were nonbelievers in the legitimacy of laying on of hands. They were trained by Bengston in an identical manner to the second experiment.

In this run, we attempted to solve the problem of control remissions and to find out if every volunteer could individually produce remissions. Thus, each volunteer was given one mouse to treat in the laboratory and one mouse to treat at home. We reasoned that because exposure to a trained individual appeared to produce remissions in previous experiments, in order to test whether each individual was effective, he or she had to remit their "private" mouse at home. It followed from the previous results that if any student could produce remissions, then all five experimental laboratory mice should also remit.

There were two control groups. The first was a cage with six mice in an adjacent laboratory in the same building. The second control group was a cage with four untreated mice sent to a laboratory in another city known only to the experimental biologist.

The results of this run have frustrated attempts to discern a pattern. All five experimental mice taken home by the students remitted. But in the laboratory, *all three of the experimental mice treated by the biology majors died within the*

expected time frame. Only the sociology and child study majors were able to remit their mouse in the laboratory.

Even as the biology majors' experimental mice died, the biology students began to look in on the control mice in the adjacent lab after three had died, and the remaining three control mice remitted. All four of the control mice sent to a distant city died well within the expected 27-day maximum.

The Fourth Experiment

The fourth experiment took place entirely in a laboratory at the Brooklyn campus of St. Joseph's College. As in the third experiment, the mice were prepared and monitored by Carol Hayes, the chairperson of the biology department. In the previous experiments, any mouse that developed a "blackened area" followed our now "classic pattern" to full remission. None of the mice that died developed this blackened area. As such, we were now confident that about 3 weeks after injection, we could spot with certainty which mice would be completely cured and which would die. Thus, we decided to repeat the experiment; this time sacrificing all the mice 38 days after injection. We selected 38 days because at this point, some of the mice would still have large ulcerations and some would have already closed wounds and be fully remitted.

Six student volunteers were given a cage with two mice each. One of the students was a biology major who had failed to remit his mouse in the laboratory in the third experiment and wanted to try again; two more students had been volunteers in a previous run and wanted to do it again out of sheer disbelief at the results they had obtained. Bengston chose three new and skeptical volunteers who were not biology majors. Unknown to us, the experimental biologist elected to not inject one mouse to observe any behavioral changes (there were none); one mouse was given two separate injections. In all, there were 11 viable experimental mice with cancer.

Eight mice on site served as the first control group. And four mice were sent to a laboratory in another city to serve as the second control group.

Ten of eleven of the experimental mice were in various stages of the remission process when they were sacrificed on Day 38 after injection. One experimental mouse never developed the blackened area and died on Day 30 after injection. Although 30 days is technically beyond the predicted 100% fatality, within 27 days, we considered this mouse to have not responded to treatment. Seven of eight on-site control mice, which were regularly looked in on by the student volunteers, remitted. All four of the control mice sent to a laboratory in another city died within the expected time frame.

After the mice were sacrificed, we sent tissue samples out to an independent laboratory for histological analysis. *Viable mammary adenocarcinoma cells were present at all stages of remission.* Only those mice whose ulcerations were completely closed were free of cancer. A summary of the four experiments is found in the Table.

TABLE
Summary of Remission Patterns

Experiment	*N*	No. of remissions	Remissions (%)
Experiment 1			
Experimental mice	5	5	100.0
Control mice on site	6	4	66.7
Experiment 2			
Experimental mice	7	7	100.0
Control mice on site	6	4	66.7
Experiment 3			
Experimental mice	10	7	70.0
Control mice on site	6	3	50.0
Control mice off site	4	0	0
Experiment 4			
Experimental mice	11	10	90.9
Control mice on site	8	7	87.5
Control mice off site	4	0	0
Overall results			
Experimental Mice	33	29	87.9
Control mice on site	26	18	69.2
Control mice off site	8	0	0

Discussion and Conclusions

We offer several preliminary conclusions. First, the treatment was successful in curing mammary adenocarcinoma. Second, it is apparent that stated belief in anomalous phenomena in general, or healing through laying on of hands in particular, is not necessary to produce healing of mammary adenocarcinoma in laboratory mice. None of the experimental healers were believers, though as the experiments progressed, they clearly hoped that their mice would live. Despite the attachment they felt toward their mice, most could be considered at least fairly strong skeptics. We cannot generalize that anyone can produce these remissions, since our sample of volunteers was clearly a nonrepresentative convenience sample. Actually, we have never tested whether *believers* or people who have allegedly experienced or produced previous anomalous phenomena are also able to produce remissions of this type of tumor.

Third, given the peculiar situation that biology majors were unable to produce remissions in the laboratory but were able to do so at home (the third experiment), it is also possible that systematic intellectual activity (these students kept scientific logs) is antagonistic to the production of healing effects.

Fourth, it seems likely that there is a stimulated immune response to treatment. There are several reasons to draw this conclusion. The discovery in the fourth experiment that there were viable mammary adenocarcinoma cells during tumor remission is consistent with an immune response (though cutting off of the blood supply to the tumor might produce similar effects).

Fig. 6. Example of large ulceration.

Some of the ulcerations grew extremely large (Figure 6), *yet no mouse ever developed any gross signs of infection, even when the size of the ulceration alone should have been enough to kill it.* Finally, and perhaps most persuasively, we were unaware that the experimental biologist at St. Joseph's College had reinjected several remitted mice months after the experiments were over. *Without further treatment, these mice were immune to the mammary adenocarcinoma.*

Finally, we may conclude that we are apparently able to cure mammary adenocarcinoma in experimental mice on demand. The reliability of the procedure has been established (we have also produced remissions at Arizona State University, though the results are not reported here).

Future Research

We find ourselves in a somewhat unique position, because the bane of previous research into anomalous phenomena has often been the lack of predictability of results. Several interesting possibilities emerge.

In terms of mammary adenocarcinoma, conventional immunological studies of mice in future experiments might yield data suggestive of the process by which remissions occur. Are there any new antibodies or an increased production of antibodies occurring during tumor regression? If so, long-term goals might include attempting to stimulate the identified immunological reaction *without* the laying on of hands. In short, the results of these healing techniques might provide useful information about how to reproduce the remissions using more conventional therapies.

Other types of cancer need to be studied to see whether they also respond to

the healing techniques used here. To date, experimentally we have only treated mammary adenocarcinoma.

Finally, because we have established such a degree of reliability, the healing techniques can be used to try to discern what is happening between the healer and the animal. Experiments can be designed to shed light on the mechanisms by which anomalous healing actually occurs. For example, in producing remissions in other species of mammals, we have anecdotally observed that the speed of remission is a function of the size of the animal. Larger animals remit more slowly than smaller ones. Are the different response rates due to metabolism rate, the mass of the animal, or the spreading of a healing energy over a wider area? Would 50 mice simultaneously treated remit at a slower rate than 25? The possibilities for research are almost endless.

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