

Virtual Mentor

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CLINICAL CASE

The Ethics of Diagnosing Nonepileptic Seizures with Placebo Infusion

Commentary by James L. Bernat, MD

Ms. Lamonica was admitted for a neurological evaluation after experiencing 2 severe seizures. At 38, Ms. Lamonica was overweight, but otherwise in good health. All studies including electroencephalograms (EEG) were normal. Because her description of her seizures seemed to exclude epilepsy—she remained fully conscious during the events, for example, and experienced no confusion afterward—her team of neurologists led by Dr. Patel began to suspect that her episodes were nonepileptic seizures (NES). The physicians contemplated using a provocative test to confirm the diagnosis.

The test was controversial because it entailed deceiving the patient. Ms. Lamonica would have EEG electrodes attached to her scalp and an intravenous catheter inserted. Dr. Patel would then tell her he was administering a solution designed to provoke a seizure. In reality, the solution would be simple saline. If Ms. Lamonica had a seizure, Dr. Patel would stop the infusion, tell her the drug was leaving her system, and watch for a concomitant end to the seizure. If no abnormal electrical activity was seen during a seizure, the diagnosis of NES would be confirmed.

An estimated 10 to 20 percent of patients who are hospitalized for seizures or treated at epilepsy clinics are suspected to have NES; some have epilepsy and NES. Nonepileptic seizures are treated with psychiatric rather than neurological interventions. While epilepsy can often be managed with medications, pharmacologic treatment for NES tends to be ineffective. Anticonvulsants are inappropriate. Psychotherapy is useful for some patients, but many remain unimproved long after diagnosis.

The key to distinguishing NES from epilepsy is whether EEG evidence of a true seizure is recorded by EEG during a typical spell. To avoid keeping the patient attached to the EEG machine for hours or days in hopes of witnessing an episode, some physicians choose to employ the so-called provocative saline infusion—the sham test described above—to expedite the diagnosis. Provocative saline infusion is thus a nocebo, a drug the patient perceives as harmful, which in Ms. Lamonica's case would mean seizure-inducing.

Dr. Patel decided to administer the provocative saline infusion to Ms. Lamonica, and she promptly had a seizure. During the seizure, her EEG remained normal. She was therefore diagnosed with NES.

Afterward, Dr. Patel wrestled with the question of whether to tell Ms. Lamonica that the provocative test had been a ruse. Though the physical risks associated with a saline infusion are minimal and the definitive diagnosis would help her by obviating the need for daily anticonvulsant drug treatment, he regretted the necessity of deceiving the patient, and felt he should reveal the truth.

Commentary

In this case, Dr. Patel chose to perform a deceptive provocative test of intravenous saline infusion because he believed it was necessary to prove that Ms. Lamonica's episodes were caused by NES. The test was safe insofar as the pharmacological effect of the infused placebo was concerned, but it produced potential harm because its use required deception. It is the deception implicit in the use of diagnostic placebos that raises ethical problems and produces their resulting harms.

As shown in this case, placebos can be used for diagnostic purposes in addition to their more familiar use in therapy and for clinical trial research controls. A placebo is a pharmacologically inactive substance that is prescribed by a physician for a patient who is expecting to receive an active agent. The placebo effect, a benefit resulting from suggestion and expectation, is the desired response. Deception is implicit in their use for diagnostic and therapeutic purposes but, because a placebo is a known condition of the control arm of a clinical trial, its use in clinical research is not considered deceptive.

Scholars have written detailed ethical analyses of physician placebo prescribing for therapeutic purposes, including the formulation of criteria for their ethical use [1]. Three published ethical analyses that addressed the use of the provocative saline infusion test to prove NES all concluded it should not be performed because of the harms resulting from the required deception [2-4]. I review the salient points here; specifically, is a test that requires deception necessary or desirable to diagnose NES? What are its risks and benefits? Does the overall harm from deception justify its benefits? What are the alternatives? Should patients later be told of the deception? Should we formulate a medical practice standard permitting deception in such cases?

Use of Deception

The placebo saline intravenous infusion test to deceptively provoke and prove NES has been described since at least 1982 [5]. Additional reports of its efficacy by advocates have continued into the 21st century [6]. Its advocates claim it is safe, reliable, and effective, and that it is justified because it benefits patients by preventing them from being wrongly diagnosed with and treated for epilepsy [7].

That deception is essential in this test is obvious. Dr. Patel lied to Ms. Lamonica when he told her that the drug he was infusing was an activating agent that would provoke a seizure when he knew it was simply saline. I am unsympathetic to the putative justification that he did not lie to her because the infusion did, in fact, provoke an episode of her "seizure." His intent was unarguably deceptive.

Purposefully lying to patients violates the mutual trust that both parties have in the truthfulness of the other and the respect that is the foundation of the patient-physician relationship. Physicians have a fiduciary duty to tell the truth based on their responsibility to respect the dignity and autonomy of the patient.

A practical risk of lying or deception on the part of patient or physician is that the other party no longer believes what she is told, a situation that damages the therapeutic value of the patient-physician relationship. The patient's discovery that she has been deceived could lead her to lose confidence in the trustworthiness of other physicians. Her loss of trust in the integrity of the medical profession would exert a negative effect on her ability to establish and maintain faith in physicians in the future and would thereby harm her future medical care.

Some patients with NES have a special vulnerability to the harms of deception. A disproportionate percentage of young women with NES have been victims of childhood sexual and physical abuse, often perpetrated by a trusted family member or friend [8]. Thereafter they have difficulty in establishing long-term trusting relationships and may be particularly harmed by physician deception [9].

Medical professionalism is a further casualty of using a deceptive test. Lying to patients coarsens and degrades a physician's integrity and self-image as an ethical professional. When physicians perform the provocative saline test in academic medical centers where trainees participate in the testing, the trainees become unwitting partners in the deception. In the medical training hierarchy, they are disempowered to protest that a procedure is unethical when ordered to participate by an attending physician who is their superior, and, thus, are forced to compromise their integrity and professionalism [3].

Paternalism

Dr. Patel undoubtedly believed that his deception was justified by the good that the positive test did for the patient. Physicians who purposely lie to or deceive a patient for "the patient's own good" are practicing paternalism. Paternalism has a long and hallowed tradition in medical practice, evolving from the fiduciary duty of a physician to identify and act in the best interest of the patient. But paternalism becomes unethical when it disenfranchises patients who wish to be fully aware of their condition and to participate in their own medical decision making.

Most paternalistic practices in medicine cannot be rigorously justified. The ethical justification of paternalism requires satisfying the following criteria: (1) the harms to the patient that the physician's act will avoid are very great, such as death or disability; (2) the harms imposed by the physician's act are, by comparison, relatively small; (3) the patient's behavior that the act will address is seriously irrational; and (4) rational persons would routinely publicly advocate deception in this circumstance [10].

Is the Provocative Test Necessary?

What are the benefits of the paternalistic act of deceptive saline NES provocation? Its primary benefit is to confirm that a clinical episode that might be an epileptic seizure is, in fact, a nonepileptic seizure. The provocative saline test is only partially accurate at this task because it has been shown to induce true epileptic seizures in some patients with epilepsy [7].

Furthermore, the mere demonstration that NES is present does not prove that the patient does not also have epilepsy. Some patients with NES also have true epilepsy, although the precise frequency of this concurrence is debatable [11]. Therefore, demonstrating that a particular observed seizure is NES, while useful, does not necessarily exclude concomitant epilepsy.

Is deception required to prove that a patient has NES? In the commonly used diagnostic protocol for suspected NES, the patient is admitted to a video-monitored epilepsy unit for several days of continuous EEG and video-monitoring. If routine EEGs are normal or have nonspecific abnormalities and if the index of suspicion for NES is high, the patient's anticonvulsant drugs usually are discontinued. Nondeceptive provocative measures, such as falling asleep and awakening, suggestion, photic stimulation, and hyperventilation are routinely employed [12].

Benbadis and colleagues studied the rate of positive identification of NES in an inpatient epilepsy unit, comparing accepted provocative procedures and the deceptive provocative intravenous saline infusion. They showed that the percentage of patients found to have NES after routine provocative procedures was identical to that found by using the provocative saline infusion. They concluded that a deceptive saline infusion provocative test was unnecessary to diagnose NES; simply using routine procedures without deception was a successful strategy that avoided ethical problems [13].

Consensus and Guidelines

Over the past two decades, a consensus has emerged that the paternalism behind use of the provocative saline infusion test for NES cannot be justified because the harms to the patient and physicians exceed the benefits [14]. Although a few scholars have argued that placebo prescription can remain good medical practice if it is conducted under ethical circumstances, these arguments were developed for prescribing therapeutic placebos and do not apply to conducting deceptive diagnostic testing [15]. If neurologists choose to conduct the provocative saline infusion, they should avoid deception by informing the patient of what substance is being infused and why.

There are now medical practice guidelines for physicians who choose to prescribe a placebo. The American Medical Association Council on Ethical and Judicial Affairs issued a recommendation for physicians who prescribe placebos for therapeutic or diagnostic purposes, cautioning that [16]:

In the clinical setting, the use of a placebo without the patient's knowledge may undermine trust, compromise the patient-physician relationship, and result in medical harm to the patient. Physicians may use placebos for diagnosis or treatment only if the patient is informed of and agrees to its use.

In summary, testing for NES using the deceptive saline provocative test is not necessary to make the diagnosis, has troublesome false positive and negative results, and causes short-term and long-term harms to patients and physicians. It has been proscribed by American medical practice standards and abandoned by most epilepsy centers.

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