
Special Procedures: Intravenous Sedative Interviews, Hoover Test, Waddell Tests, and Hypnosis

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An interview with the patient under an intravenous (IV) sedative, the Hoover test, Waddell tests, and hypnosis are some of the specialized techniques useful in the consultation-liaison (CL) setting for rapid diagnosis of potential psychological factors affecting a physical condition and for behavioral control of pain and anxiety.

This chapter presents an example of an IV sedative interview using lorazepam and describes the procedure in detail, and discusses the Hoover test and the indications, precautions, and procedure of hypnosis in the CL setting.

34.1 Case Presentation: Patient Interviewed Under Lorazepam

A 42-year-old Arabic woman, married to a part-time Protestant minister, was admitted to the hospital with chest pain. Myocardial infarction was promptly ruled out, but the patient developed neck pain and left-sided weakness of her arms and legs and paresthesia of her left side. Magnetic resonance imaging showed moderate cervical stenosis without any evidence of spinal compression. The deep tendon reflexes were normal, and the paresthesia was confined to the left side at midline. Psychiatric consultation was requested to rule out “malingering, factitious disorder, or conversion.” The patient was dressed in hospital attire, of medium build, with brown hair; she spoke fluent English, showed labile affect, and was moderately

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depressed about her physical condition. Cognitive exam was normal. She was one of eight children born of Muslim Arab parentage in Israeli-occupied territory. She was rather independent, and upon finishing school, enrolled to be trained as an Israeli police officer. She met her future husband who was an American evangelical missionary traveling in the Middle East. They eloped, married, and came to the USA, where she became a housewife with two children. Her husband developed back pain attributed to a herniated disk and was placed on permanent disability, though he continued to preach on and off. She had never applied for permanent residence or citizenship, and was worried about her status, as she might not be eligible for disability should she become permanently paralyzed. Her oldest daughter, now 18, had just left home to attend college out of town. The consultant felt that an interview with the patient under lorazepam was indicated as her symptoms were disproportionate to objective findings, and there seemed to be a potential psychological overlay to her physical symptoms.

The consultant explained to the patient that an interview using an antianxiety, muscle-relaxant medication sometimes helps patients to talk about stresses that may worsen physical symptoms, and that in a state of relaxation patients might be able to regain some control over muscles and nerves that have been affected by stress. The patient wished to discuss it with her husband, who turned out to be an imposing bearded man with a booming voice, who seemed to be very controlling. Initially, he would not consent to the interview unless he could be present, but it was explained that a psychiatric interview of this type has to be confidential even to the spouse. Eventually, the patient consented to the interview, which would be videotaped, provided that she would be able to watch it afterward. A standardized consent form for special procedures was signed, and an additional video interview consent was obtained.

34.1.1 The Interview

Five ampules of lorazepam 2 mg solution were ordered and a crash cart with emergency breathing equipment was on standby in case of a respiratory

arrest. If the patient does not have an IV running already, the ampules may be pooled and diluted so that a 10-cc syringe contains 4 mg of lorazepam. The patient was instructed to count backward from 100 as the first syringe with 2 mg of lorazepam was slowly injected into an existing IV line. Her speech became slurred and she made mistakes in counting about halfway into the second syringe (3 mg lorazepam), at which point she was asked to relax, imagine something pleasant, and to describe it. She imagined being back in Palestine, playing in the fields as a child, running and singing. She missed home, but could not visit as she was afraid of her family, and besides she might not be able to reenter the USA.

She was quite tearful at this point. Another 2 mg of lorazepam was slowly injected as the consultant gently refocused her on the present, and told her to talk about anything that was on her mind. She talked about her daughter, Sarah, who just left for college, who is an all-American girl, who plays basketball, and who wants to be a criminologist. She will miss her, but she is happy for her. The consultant then asked her to empty her mind of all thoughts, just concentrate on a feeling of relaxation all over her body, gentle, pleasant, comfortable, relaxation, beginning from the feet, up the legs, thighs, abdomen, chest, hands, arms, shoulders, neck, face, and head. Then the consultant asked her to first gently lift her right hand (the unaffected side), which she did easily, and then the left, affected, hand, which she had initial difficulty doing, but with reiterated suggestions of relaxation and concentration she was able to raise it halfway. Then she was asked to raise her unaffected leg, and then, the affected leg, which she was, again, able to do halfway.

The consultant reassured the patient that with relaxation and concentration she was able to overcome her symptoms at least part of the way, which proved that she could expect eventual improvement of her symptoms. She was told that she would remember what was said and what happened during the interview to the extent that she felt comfortable doing so, and that she would regain some of the function of her limbs to the extent she might be ready to do so. Then she was asked again to relax and, if she wished, to sleep a little. Another 1 mg of lorazepam was injected.

The patient was on a monitor for heart rate and respiration, and the nurses were instructed to observe her frequently for the next 2 h. The patient slept for about an hour after the interview.

For medical documentation purposes, the consultant listed the diagnosis as psychological factors affecting medical condition, for pain and weakness, with conversion features (we use “psychological factors affecting medical condition” to cover all somatic symptom disorders; see Chaps. 21–23).

34.1.2 Subsequent Events

Following the lorazepam interview, the patient regained some use of her extremities, but continued to complain of neck pain. She was discharged with prescribed physical therapy as an outpatient, and recommended follow-up by a psychiatrist, which she refused. She was lost to follow-up until about 2 years later, when the consultant happened to see the patient in the hospital lobby. She was happy to see the consultant, told him that she was visiting a friend who was in the hospital. When the consultant asked her about her health, she said, “Well, all the paralysis and pain disappeared after I had surgery for the narrowing of the spinal canal. I am now working full time, and doing very well.” Apparently, about 3 months after her lorazepam interview, she had gone to a university hospital in another city, where they decided to operate on the cervical stenosis. She had obtained her permanent residence status since then, and was now fully recovered.

34.1.3 Discussion

Like many patients with physical symptoms with psychological overlay, this patient had cervical stenosis that might have contributed to some of her symptoms, but the paralysis and paresthesia were not fully consistent with an organic pathology. Psychodynamically, she seemed to have considerable conflict over dependence versus independence and a conflicted relationship with her controlling husband. Proximal stressors might have included her daughter’s gaining

independence, and her chronic concerns about her immigration status with her pathologic procrastination over doing something about it. The surgery on the cervical spine seems to have provided two things: relief from whatever physical symptoms it caused, and, perhaps more importantly, a psychological rationale to assume a different aspect of her personality, specifically a resurgence of the frustrated drive for independence, as she straightened out her immigration status and found a full-time job, emancipating herself from her controlling husband. Now, as an American permanent resident, and perhaps as a citizen in the future, she might even be able to visit her homeland.

34.2 Intravenous Sedative Interview

The above case illustrates the use of the lorazepam interview in which partial function of a paralyzed limb was restored through relaxation and concentration. Intravenous lorazepam causes frontal lobe disinhibition and muscle relaxation at the same time, producing a dissociative state where the patient may be more amenable to suggestions given by the consultant. In the past, sodium Amytal was frequently used for such interviews; in fact, any intravenous relatively short-acting sedative may be used. In attempting such interviews, it is essential that patients be prepared well beforehand so that they will feel relaxed and at the same time will be able to concentrate, and that medical personnel are available should there be any untoward effect. Prior to attempting such interviews independently, the consultant should observe and practice them under supervision by an experienced CL psychiatrist.

The intravenous sedative interview may be particularly useful in patients who seem to be catatonic or mute in the CL setting. Under IV sedation, as described above, mute patients can often vocalize with the suggestion of vocal cord relaxation, and then talk. Then the consultant may be able to differentiate among catatonia/mutism secondary to depression (quite common), psychosis, or brain damage. If patients are depressed, they are likely to talk about depressive thoughts

and delusions; if psychotic, the verbalizations may be loose, bizarre, or delusional; and in brain damage, patients may simply fall asleep.

At times, patients may become emotional during a sedative interview and abreact or live through a traumatic event. The consultant should take care that such abreaction does not adversely affect the medically ill patient through judicious questions, suggestions of relaxation, and, if necessary, additional administration of the sedative. It is always important to give the suggestion that patients will remember just as much as they may wish to after the session.

34.3 Hoover Test

This is a neurologic test to ascertain whether the paralysis of a lower extremity is primarily psychological (conversion, somatization, factitious, malingering) or organic. Facing the patient at the foot of the bed, the tester places both palms under the heels of the supine patient. Then the tester asks the patient to raise the unaffected limb. The patient should have no difficulty in doing this. Then the tester asks the patient to raise the affected paralyzed limb. If the paralysis is organic, the tester should feel pressure on the palm under the unaffected limb as the patient attempts to raise the affected limb. If the tester feels no pressure, then the paralysis is presumptively caused by psychological factors or conscious malingering.

While this test is reasonably reliable, there are occasions when the patient may have an organic lesion, but also has motivational reasons not to cooperate with the test. The tester should interpret the results in the light of other findings, such as reflexes, spasticity, and imaging studies.

34.4 Waddell Tests

Waddell tests were first described by an orthopedic surgeon and are commonly used in orthopedic evaluations of back pain (Main and Waddell 1998). They are simple to perform and take little time. They are considered non-organic or non-physiological findings. Waddell did not consider them to be diagnostic of malingering.

Rather, they are likely to indicate that psychological factors are significant in the symptomatic complaints of low back pain (Waddell et al. 1980). As such, the psychiatric consultant may find them useful in evaluating chronic pain patients. In one study of patients claiming injury and persistent pain, positive Waddell tests for nonphysiological findings were present in the majority of patients who had suffered trivial injuries in contrast to very few of those who had suffered significant injuries (Streltzer et al. 2000)

There are several categories of Waddell tests related to distraction, simulation, overreaction, non-anatomical sensory disturbances, and superficial tenderness. A particularly useful test is performed by asking the patient to stand up keeping the spine as straight as possible. This can also be performed in a sitting position. The patient is then told that pressure is going to be placed on the spine. The patient is asked to report any pain that develops at which point the test is immediately stopped. Then the examiner places his hand on the top of the patient's head. Pressure is then gradually increased by pressing downwards. A positive test occurs when the patient says this produces or increases back pain. In fact, it is physiologically impossible for this maneuver to produce any sensation in the back. This test is not recommended if neck pain is also present as a complaint.

Another easily performed Waddell test is that of simulated rotation. The patient is asked to stand straight with his arms at his side. The examiner holds the arms next to the hips and rotates the body to either side, keeping the arms steady at the sides of the body. This keeps the shoulders and the hips in the same plane, simulating spine rotation without any actual twisting of the spine. If the patient states that this causes back pain, it is considered a positive test.

Touching the back in the area of the pain with very light pressure so that sensation is only felt by the skin with no pressure on the muscles is the technique for testing superficial tenderness. If this elicits complaints of back pain, it is considered a positive test.

Other simple tests for non-physiological back pain and also neck pain have been described (Blom et al. 2002; Sobel et al. 2000)

34.5 Hypnosis in the Consultation-Liaison Setting

Historically, hypnosis was used extensively by psychiatrists to diagnose and treat hysteria (see Chaps. 1 and 21). Since Freud abandoned hypnosis in favor of free association, the use of hypnosis in psychotherapeutic settings declined, but it continued to be used in treating dissociative syndromes (e.g., multiple personalities) and in some CL settings. In the CL setting, hypnosis can be used in place of the intravenous sedative interview discussed above, provided the patient is willing and hypnotizable. Despite Charcot's historical claim that hypnotizability was pathognomonic of brain degeneration in hysteria, our modern understanding of hypnotizability is that it represents an ability to concentrate intensively, to be absorbed in a task, and to be able to dissociate under cue.

Patients who are unable to concentrate, such as delirious, demented, and psychotic patients, are usually unable to use hypnosis. Persons who have a natural tendency to dissociate, as in borderline personality, posttraumatic stress disorder (PTSD), and dissociative disorders, may be particularly good subjects for hypnosis. There is evidence that hypnotizability is associated with differential electroencephalograph (EEG) patterns (Graffin et al. 1995; Ray 1997; Ray et al. 2002; Williams and Gruzelier 2001), and, in highly hypnotizable subjects (about 8 % of the population), hypnosis can induce perceptual changes (hallucinations) with corresponding activation of brain sensory and association areas (Kogon et al. 1998; Kosslyn et al. 2000).

There are gradations of hypnotizability; about 75–80 % of the general population can make use of hypnosis at least to an extent, particularly for anxiety and pain control.

34.5.1 Indications

Hypnosis in the CL setting can be used for the following reasons:

1. Relaxation and anxiety control
2. Pain control

3. Habit control (e.g., smoking)
4. Exploration of psychological factors affecting physical condition

34.5.2 Contraindication: Unprepared Patient

An unprepared patient is one whose expectations and motivations for hypnosis deviate from the stated purpose of the procedure. This can be explored in the preparation phase for hypnosis.

34.5.3 Preparation

Before any hypnotic procedure, the patient should be informed about what to expect. Ask whether the patient had previous experience with hypnosis or had seen hypnosis being performed, and then explain that medical hypnosis is not like stage hypnosis, in that the patient will not be told to do things that are foolish or unwarranted. Explain that hypnosis is not magic; it is simply a way of concentrating attention and causing profound relaxation through concentration. It is a way of utilizing an inherent ability of the patient to concentrate and relax; there is nothing that the hypnotist does to the patient. It is performed solely for the purpose of helping the patient to relax (or reduce anxiety, to control pain, to help with diagnosis and control stress, etc.). Patients under hypnosis will not do anything against their will during the hypnotic session; in fact, they will never lose control, and they will be able to remember everything that happened during the session.

Hypnosis for relaxation, anxiety, and pain control is particularly useful in the CL setting using the procedure presented below. A similar procedure may be used to explore psychological factors affecting a physical symptom as in an intravenous sedative interview, discussed above, substituting the relaxation and concentration achieved through hypnosis for that of the intravenous sedative. For hypnosis to stop smoking, see Herbert Spiegel's (Spiegel 1970) classic article. A more intensive form of hypnotic treatment for smoking has shown a success rate of 40 % in a 6-month follow-up (Elkins et al. 2006).

34.5.4 Procedure for Hypnosis for Relaxation, Anxiety, or Pain Control

First, the consultant should explain the purpose of the hypnotic session, have an informed consent form signed for a special procedure (hypnosis), and prepare the patient as discussed above. Then the consultant should ask the patient to think about a particularly relaxing place where the patient would like to go in his/her imagination, and, if it is for pain control, what the patient would like to imagine to control the pain, for example, a novocaine injection to the painful spot, a block of ice numbing the pain, a warm electric blanket surrounding the painful area, or something else—patients can be creative here. During the hypnotic session, the consultant will suggest to the patient to imagine exactly what the patient wants. The most important aspect of hypnosis for relaxation and pain control is to teach self-hypnosis, so that the patient can use it at any time it is needed. Thus, a patient who was in the intensive care unit with multiple fractures and multiple tubes inserted was able to imagine sunning himself in a beautiful beach looking at relaxing sailboats with a grin on his face, which was puzzling to the nursing staff.

Below is a procedure for teaching self-hypnosis that may be modified as indicated or desired. For example, if the patient's left arm or hand is not available for levitation as instructed, this part may be skipped (as may the other parts in parentheses below), and the patient may simply proceed to looking down on a favorite spot while still floating in air.

The CL psychiatrist should learn to use hypnosis under supervision to gain confidence with its use.

34.5.5 Hypnotic Procedure for the Consultation-Liaison Psychiatrist

This procedure is modified from Herbert Spiegel's induction technique. With the patient sitting or lying comfortably in bed, first discuss hypnosis

experiences and prepare the patient as outlined above. Second, have the patient determine a favorite relaxing spot. Third, ask the patient to look all the way up while keeping the head level, and while still looking up, close the eyelids slowly. Then have the patient take a deep breath while still looking up with eyes closed, hold, and exhale and relax the eyes. Then ask the patient to open the eyes, and say, "This is the first step we will be using to get you into a relaxed state. As you can see, this is not difficult to do. Are you ready?" If the patient answers yes, proceed. If the patient has questions, discuss them. The better prepared the patient, the better the hypnotic experience will be.

Then read aloud (or say, if the procedure is familiar) the following instructions:

Lie or sit comfortably in an open position as you are doing now. Relax. Look all the way up, take a deep breath, close your eyelids slowly. Exhale and relax your eyes.

Concentrate on a feeling of floating, floating, floating ... Imagine yourself floating. Floating among soft, white clouds, floating, floating, floating ... And now you begin to see scenery under you as you are floating, buildings in the distance, fields, trees, hills. [If the patient's left hand is unavailable, skip to the end of the next parenthesis:]

(While you concentrate on this sensation of floating, now also concentrate on your left hand, and imagine that it is becoming lighter and lighter and lighter, like a huge buoyant balloon ... Getting lighter and lighter and lighter ... Imagine that the middle finger of the left hand is attached by a string to a huge, helium-filled balloon, and it is pulling the finger up, and let the finger and the hand go up ... feeling very, very light ... in a smooth motion, let your elbow bend, and let the hand go up until your forearm is in an upright position ... Let your hand go up feeling very, very light ... Sometimes this is an amusing sensation as your hand becomes so light that it floats up like a huge buoyant balloon. If your hand is not up yet, imagine it being pulled up by a huge buoyant balloon, and put it up in a smooth motion, until your forearm is in an upright position Now, when your hand is up in this position feeling very, very light, and ...)

When you feel so light that you can imagine yourself floating, and you imagine and see scenery below you, this is the signal that you are in a state of concentrated attention and relaxation, a state of self-hypnosis, when you can concentrate your attention and by concentrated attention, what you imagine feels real. In the state of concentration, concentrate on the sensation of floating, floating, floating, and imagine yourself floating among soft, white, clouds, floating, floating, floating, and ...

Concentrate on the feeling of relaxation all over your body, (read the following body parts very slowly) your legs, thighs, hips, abdomen, back, chest, shoulders, arms, neck, head, all over your body, and as you float among the soft white clouds, you look down and see, under the clouds, peaceful scenery, trees, fields, towns, mountains, the sea coast ...

Now you see your favorite relaxing spot, and gently land on the spot, and look around, soak in the peaceful surroundings, the fresh air, feel the breeze, and enjoy the scenery and the sounds ... and you feel yourself relaxing, your legs, thighs, hips, abdomen, back, chest, shoulders, arms, neck, face, head, all over your body ... and you can stay here, relaxing, enjoying the scenery ... If you want, you can sit up, walk around, whatever relaxes you.

[For pain control, add the following: While you are here, very relaxed and very comfortable, you can also imagine that your painful area is (given an injection of novocaine ... Now, you feel the pinch, and the numbness spreading) [or] (wrapped in a warm electric blanket, and the warmth is spreading, neutralizing the pain) [or] (in a block of ice, you feel the cold, and the numbness caused by the ice, spreading and neutralizing the pain) and as long as you are here, you can continue this sensation as long as you like, feeling relaxed at the same time.]

And when you are ready to come out of this relaxed state, all you have to do is count backward, from 3 to 1, don't do this yet, and at the count of three, look all the way up with your eyes still closed, at the count of 2, relax your eyes, and at the count of 1, make a fist with your left hand and open your eyes, (and all the normal sensations of the hand and arm will return), and you will be out of the state of self-hypnosis, feeling

refreshed, clear-headed, and energetic. From now on, whenever you want to come to this state of concentrated attention and relaxation, all you need to do is just what you did just now: Sit or lie down in a comfortable position, look all the way up, take a deep breath, close your eyelids slowly, exhale, and relax your eyes, then concentrate on a feeling of floating, floating, floating, (and imagine that your left hand is getting lighter and lighter, and let it go up in an upright position), and let yourself float among soft, white clouds, relax all muscles of your body, then locate your relaxing spot, gently land, and enjoy ... When you are ready to come back, count backward from 3 to 1, at the count of 3, look all the way up, at the count of 2, relax your eyes, and at the count of 1, (make a fist with your left hand and) open your eyes slowly (and all the normal sensations and control will return to the hand), and you will be out of the state of self-hypnosis, feeling refreshed and relaxed. Ok. Now, I'll count backwards from 3 to 1. 3—look all the way up, 2—relax your eyes, 1—(make a fist with your left hand and) open your eyes slowly. Now you are out of the state of hypnosis. Do you feel relaxed?

Suggest to patients that they do this self-hypnosis as many times a day as possible. Discuss the following points and any other questions the patient might have. Here are some example questions:

“What if I am interrupted while in self-hypnosis?” “Just quickly count backward, 3-2-1, and make a fist with your left hand, and you will be out of the hypnotic state, feeling relaxed and refreshed.”

“What if I see images I did not plan on?” “As long as it is pleasant, enjoy! Some people can use hypnosis creatively, and may be able to do various pleasant things in vivid imagination. If anything unpleasant happens, simply come out of the hypnosis by counting backward, 3-2-1, and open your eyes while making a fist.”

“What if I still seem to be in a trance after I come out?” “Simply reenter hypnosis quickly by looking all the way up, close your eyes, take a deep breath, hold, and exhale, and then look up again, count backward, 3-2-1, make a fist, and open your eyes. You will definitely be out of the trance.”

34.6 Other Techniques

In addition to the techniques described in this chapter, there are other techniques that may be equally useful in CL psychiatry, such as relaxation training without hypnosis, mindfulness training, and meditation, which the reader is encouraged to explore.

References

- Blom, A., Taylor, A., Whitehouse, S., Orr, B., & Smith, E. (2002). A new sign of inappropriate lower back pain. *Annals of the Royal College of Surgeons of England*, *84*, 342–343.
- Elkins, G., Marcus, J., Bates, J., Hasan Rajab, M., & Cook, T. (2006). Intensive hypnotherapy for smoking cessation: A prospective study. *The International Journal of Clinical and Experimental Hypnosis*, *54*, 303–315.
- Graffin, N. F., Ray, W. J., & Lundy, R. (1995). EEG concomitants of hypnosis and hypnotic susceptibility. *Journal of Abnormal Psychology*, *104*, 123–131.
- Kogon, M. M., Jasiukaitis, P., Berardi, A., Gupta, M., Kosslyn, S. M., & Spiegel, D. (1998). Imagery and hypnotizability revisited. *The International Journal of Clinical and Experimental Hypnosis*, *46*, 363–370.
- Kosslyn, S. M., Thompson, W. L., Costantini-Ferrando, M. F., Alpert, N. M., & Spiegel, D. (2000). Hypnotic visual illusion alters color processing in the brain. *The American Journal of Psychiatry*, *157*, 1279–1284.
- Main, C. J., & Waddell, G. (1998). Behavioral responses to examination. A reappraisal of the interpretation of “nonorganic signs”. *Spine*, *23*, 2367–2371.
- Ray, W. J. (1997). EEG concomitants of hypnotic susceptibility. *The International Journal of Clinical and Experimental Hypnosis*, *45*, 301–313.
- Ray, W. J., Keil, A., Mikuteit, A., Bongartz, W., & Elbert, T. (2002). High resolution EEG indicators of pain responses in relation to hypnotic susceptibility and suggestion. *Biological Psychology*, *60*, 17–36.
- Sobel, J. B., Sollenberger, P., Robinson, R., Polatin, P. B., & Gatchel, R. J. (2000). Cervical nonorganic signs: A new clinical tool to assess abnormal illness behavior in neck pain patients: A pilot study. *Archives of Physical Medicine and Rehabilitation*, *81*, 170–175.
- Spiegel, H. (1970). A single-treatment method to stop smoking using ancillary self-hypnosis. *The International Journal of Clinical and Experimental Hypnosis*, *18*, 235–250.
- Streltzer, J., Eliashof, B. A., Kline, A. E., & Goebert, D. (2000). Chronic pain disorder following physical injury. *Psychosomatics*, *41*, 227–234.
- Waddell, G., McCulloch, J. A., Kummel, E., & Venner, R. M. (1980). Nonorganic physical signs in low-back pain. *Spine*, *5*, 117–125.
- Williams, J. D., & Gruzelier, J. H. (2001). Differentiation of hypnosis and relaxation by analysis of narrow band theta and alpha frequencies. *The International Journal of Clinical and Experimental Hypnosis*, *49*, 185–206.