

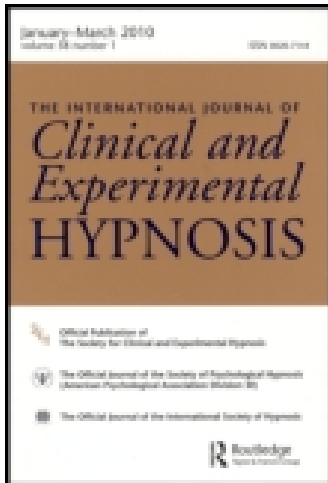
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### The Association of Hypno-Anesthesia and Conventional Anesthesia in a Patient With Multiple Allergies at Risk of Anaphylactic Shock

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# THE ASSOCIATION OF HYPNO-ANESTHESIA AND CONVENTIONAL ANESTHESIA IN A PATIENT WITH MULTIPLE ALLERGIES AT RISK OF ANAPHYLACTIC SHOCK

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**Abstract:** A male patient needed surgery for the ablation of 4 impacted maxillary molars that prevented chewing and had contributed to progressively worsening trigeminal neuralgia. Two previous anesthetic procedures led to episodes of severe anaphylactic shock with the need for a prolonged stay in the ICU. Hypnotic anesthesia was therefore selected as a safer option for this patient. After 4 preparative sessions, on the day of surgery, the hypnotist provided an induction followed by suggestions for mouth and face anesthesia. Intubation occurred following the introduction of remifentanyl and sevoflurane. The surgery lasted about 90 minutes and proceeded uneventfully. This case report describes how conventional and hypnotic anesthesia may work synergistically and may be particularly advantageous in case of drug allergy.

With the advent of modern anesthetics, the risks associated with anesthesia have declined considerably. Anesthesia is therefore considered a reasonably safe technique, even in patients at high surgical risk. However, because of multiple anesthetic drug allergies, there are cases in which the risk of anesthesia is unacceptably high. The literature data regarding anaphylactic reactions during anesthesia differ according to a particular geographical region and range between 1:3500 and

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1:20,000 of the total number of anesthetics (regional and general), with a mortality rate of 4% and an additional 2% surviving with severe brain damage (Levy & Castells, 2011; Mertes & Laxenaire, 2004). The most common triggers of allergic reactions include neuromuscular blocking agents, latex, intravenous anesthetics, prophylactic antibiotics, colloids, and opioids. Complementary strategies such as clinical hypnosis may be useful to reduce the risk of anaphylaxis by decreasing the number and the amount of drugs necessary for anesthesia and analgesia.

Current models of pain, supported by a growing body of evidence, support the conclusion that sensory input plays an inconsistent, and often weak, role in the experience of pain. Nociceptive signals from the peripheral nervous system undergo a complex modulation by cognitive, affective, and motivational processes when they enter the central nervous system (CNS; Kupers, Faymonville, & Laureys, 2005). This explains, at least in part, how strategies that impact neurophysiological processes, such as hypnosis, can have such a large impact on the modulation of chronic pain (Dillworth & Jensen, 2010; Elkins, Jensen, & Patterson, 2007; Jensen & Patterson, 2006).

On the other hand, the use of hypnosis for acute surgical pain control is not as widely accepted. There are some reports of surgical procedures performed in a hypnotic trance. M. E. Faymonville, a pioneer of hypnosedation, has treated thousands of subjects undergoing minor and major surgery, prevalently plastic and endocrine surgery (Faymonville, Meurisse, & Fissette, 1999). She and her colleagues have demonstrated that both pharmacological and psychological strategies for pain control can modulate the cerebral network involved in noxious perception (Faymonville, Boly, & Laureys, 2006). From the observations on the modulation of the electrical activity in the brain during hypnosis, specific brain areas within the pain neuromatrix have been identified, and activity in these areas varies as a function of the specific hypnotic suggestions used (Faymonville et al., 2003).

A recent meta-analysis investigated the efficacy of hypnosis in adults undergoing surgical or medical procedures compared to standard care alone or an attention control (Tefikow et al., 2013). The authors concluded that benefits of hypnosis on various surgically relevant outcomes were demonstrated, although further methodologically sound randomized controlled trials (RCTs) are needed. Thus, the documented experiences related to hypnotic anesthesia for surgery are somewhat sparse. Moreover, we are not aware of any published report of a case of severe allergy performed with tracheal intubation for maxillofacial surgery.

## CASE DESCRIPTION

A male patient, 35-years-old, needed surgery for the ablation of four impacted maxillary molars that prevented chewing and that had led to progressively worsening trigeminal neuralgia. In the last month, the clinical situation was complicated with the occurrence of a local infectious process that could have resulted in sepsis. The patient had a remarkable history of food, drug, and latex allergies. He reported an anaphylactic shock following the injection of an antibiotic drug, as well as a history of severe allergies to a large number of medications (including nonsteroidal anti-inflammatory drugs, acetaminophen, beta-lactams, quinolones, macrolides, corticosteroids excipients). Two previous anesthetic procedures had led to episodes of severe anaphylactic shock with glottis edema and the need for a prolonged period of care in the ICU. Allergy to benzodiazepines, propofol, barbiturates, curare, fentanyl, and amide local anesthetics had also been documented. Further provocative immunological tests had been advised against, in order to avoid, on the one hand, the probable anaphylactic reaction and, on the other, the likely sensitization to a new drug to be possibly used in emergency once only.

After an initial interview with the patient and the operators involved, it was agreed to follow a structured plan that would involve hypnotic anesthesia to be developed in a relatively short time (20 days), due to the urgency of the surgery. The patient, after being fully informed, gave his written consent to the anesthetic plan. The plan included (a) four presurgery treatment sessions and (b) both hypnosis and appropriate anesthetic care during the surgery. The anesthetic management component of the plan was fully and independently under the direction of the Head of Anesthesia (one of the authors, L. D. T.), while the hypnotic component of the plan was managed by an anesthesiologist who was also expert in the use of hypnosis (one of the authors, C. A.).

The first preoperative meeting lasted about 3 hours and included taking a history, a discussion of the therapeutic goals, and development of therapeutic rapport, by (a) assessment of the ability by the subject to achieve a trance condition and evaluation of hypnotic depth, (b) elicitation of hypnotic phenomena and observation of the patient, and (c) assessment of motivation and explicit agreement on the therapeutic goals.

The second preoperative meeting lasted 2 hours and 30 minutes and included the following: (a) psychotherapeutic hypnotic work to reduce the anxiety and the patient's sense of impending death related to previous experiences; (b) hypnotic suggestions for a general calming of the immune system, so that health-promoting substances would be released in the blood stream; and (c) reframing of some childhood

traumatic episodes that were hindering the development of a constant and deep trance. A psychotherapeutic work has therefore been developed that aimed at reducing the elements of psychological disturbance and to encourage greater confidence in the therapeutic relationship and the self-healing potential.

The third preoperative meeting lasted 2 hours and included teaching the patient to be able to achieve glove anesthesia in the left hand and the ratification test by transfixing the skin of the back of his left hand to a length of 3 cm with a 16 G needle. The patient was asked to verify the experience and the degree of anesthesia or analgesia via measures of pain intensity using a 0-to-10 numerical rating scale (NRS). Prior to the hypnotic suggestions and pain stimulus, the patient reported a pain level of 0. Following the hypnotic induction and analgesia suggestions during the pain stimulus, the patient reported a pain intensity of 1/10. Physical examination of the back of his hand showed intense vasoconstriction without any blood loss. After 10 minutes, the needle was removed without discomfort (NRS score = 0). Upon emerging from hypnosis, the patient reported that his hand remained comfortable.

The fourth and final preoperative session occurred the day before surgery in the operating room. It lasted about 1 hour. Both the anesthesiologist and the hypnotist were present. The patient was positioned on the operating table, monitored and instrumented as routine with the exception of the IV line. A deep trance was rapidly induced and anesthesia of left hand and forearm was established. Next, the hypnotist suggested a standard translocation of hypnotic anesthesia from the left hand to the mouth and face, while also reinforcing a mind-body dissociation. The preoperative simulation session confirmed that the environment was compatible with the proposed aims. It also confirmed that the patient was able to achieve a deep and stable hypnotic trance in the operating room setting, an ability to elicit phenomena of anesthesia in the affected area of the body, and the persistence of anesthesia, analgesia, and paresthesia, even after the trance.

On the day of surgery, the Head of Anesthesia, assisted by two fellow anesthesiologists, and the hypnotist were in the room. The patient was positioned on the operating table. Noninvasive blood pressure, electrocardiogram (ECG), peripheral saturation of oxygen, and electroencephalogram (EEG) bispectral index were monitored. Two large caliber veins were cannulated and intravenous lines established. The hypnotist proceeded with the induction of deep trance with mouth and face anesthesia. The time to intubation was approximately 20 minutes. The intubation took place after the introduction of intravenous remifentanyl 0.5–1  $\mu\text{g}/\text{kg}/\text{min}$  and sevoflurane 1%. It was accomplished with a video-laryngoscope. At laryngoscopy, the vocal cords were adducted to midline and were gently spread apart by advancing the tracheal tube tip. The patient had some hints of cough.

The quality of the anesthesia was judged by an empirically based drug dosing and through observation and monitoring of several biological parameters. The quality of clinical hypnosis was checked not only through signs or clinical indicators of trance but also through the response of the patient. The intervention lasted about 90 minutes and proceeded without any adverse events. At the end of the surgical procedure, the patient was awakened and extubated uneventfully. He was then transferred to the Intensive Care Unit for postoperative monitoring. Remifentanyl infusion was gradually reduced and then stopped in 2 hours.

At 3-months follow-up, the patient reported an overall very positive experience, summarized as follows:

- Rapid reduction of anxiety since the first therapeutic encounter and progressive disappearance of anguish.
- Day of surgery remembered as peaceful, in the patient's own words "beautiful, one of my most positive experiences."
- To the patient's surprise, no feeling of pain during the preoperative preparation (two peripheral venous cannulation).
- Partial recall of the anesthesia induction phase: "I felt peaceful, detached, and had a great time."

Collaterally, the patient noted after 3 months from the day of surgery an apparent decrease in the reactivity of his immune response, which permitted the reintroduction without adverse effects of certain foods previously excluded due to allergic responses.

## DISCUSSION

Although the term *hypnosis* is common in anesthesia, to our knowledge there is still a considerable resistance by anesthesiologists, at least in Italy, to consider clinical hypnosis as a real option that may add value to their profession. The use of hypnotic techniques for performing surgical procedures is not new (De Benedittis, Panerai, & Villamira, 1989; Price, 1996). However, there is growing evidence for the efficacy of hypnotic analgesia. Recent studies have shown how the neurophysiological underpinnings of pain can be visualized in the CNS and how hypnotic suggestions can drastically change the patterns of pain-related central activation (Antonelli, 2005).

This case report highlights the possibility of a synergy between traditional biomedical and hypnotic procedures that may be particularly advantageous in case of drug allergy. Allergic or hypersensitivity reactions involve IgE antibodies, activation of mast cells and basophils, and the release of chemical mediators. Studies have shown that hypnosis may alter the immune response to various stimuli (Gruzelier, 2002;

Zachariae & Bjerring, 1990; Zachariae, Bjerring, & Arendt-Nielsen, 1989). Unfortunately, to date, this field of research has been characterized by small-scale and largely preliminary studies.

Given the lack of references in the literature that could lead us toward a systematic approach to our patient, we needed to prepare an individualized protocol. In hypnotic psychotherapy, this “tailoring” approach is common and in fact is the standard of care (Jensen, 2011). It consists essentially of structuring an ad hoc therapy that supports the needs as well as the resistances of the patient in a dynamic way. This approach, however, is difficult to reconcile with the current medical model and its use of specific paradigms and treatment protocols. This difficulty is further exacerbated by the demands of healthcare economics that require programming (and often rationing) of resources, space, and time.

Given that this is a case study, we are not able to examine questions regarding potential synergism between the more traditional and hypnotic procedures used in this case. However, our overall impression is that of a synergism, at least during the initial phase of the surgery. We clearly observed, before the introduction of the anesthetic drugs, that the patient’s clinical condition was optimal; he appeared comfortable and relaxed and stable. His description of his experience is entirely consistent with this observation. In our view, the strong motivation of the subject and the rapport between the hypnotist and patient were essential components that contributed to the success of the procedure.

During the meetings with the patient, deep and poorly processed psychological needs have emerged. Out of respect for the explicit objectives agreed with the patient, any intrusion not strictly necessary for the development of hypnotic anesthesia was avoided. However, the information acquired has permitted a better tailoring. An analysis of the patient’s deep needs allowed us to modulate different psychological aspects regarding analgesia; aspects that certainly could have affected the global pain experience and probably the organism’s hyper-responsiveness in reaction to contact with chemicals. Apart from the benefits regarding strictly the surgical time, the hypnotic preparation significantly improved the psychological and physical condition of the patient, who was able to live the whole experience with greater confidence and serenity.

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**Die Verbindung zwischen Hypno-Anästhesie und konventioneller  
Anästhesie bei einem Patienten mit multiplen Allergien und der Gefahr  
eines anaphylaktischen Schocks**

Carlo Antonelli, Marco Luchetti und Luigi De Trana

**Abstrakt:** Ein männlicher Patient sollte sich der Entfernung dreier maxillarer Molare unterziehen, die das Kauen behinderten und zu einer zunehmenden Trigeminusneuralgie geführt hatten. Zwei vorangegangene Anästhesien führten zu schweren anaphylaktischen Schocks und einem verlängerten Aufenthalt auf der Intensivstation. Aus diesem Grunde wurde die Hypnoanästhesie als sicherere Option für diesen Patienten gewählt. Nach 4 vorbereitenden Sitzungen induzierte der Hypnotiseur am Tage der Operation eine Trance, gefolgt von Suggestionen einer Mund- und Gesichtsanästhesie. Die Intubation erfolgte nach Gabe von Remifentanyl und Sevofluran. Der Eingriff dauerte etwa 90 Minuten und gestaltete sich komplikationslos. Diese Fallbeschreibung zeigt, wie konventionelle und hypnotische Anästhesie synergistisch zusammenarbeiten können und vor allem bei Fällen von Überempfindlichkeiten gegenüber Medikamenten von Vorteil sein können.

STEPHANIE REIGEL, MD

**La combinaison d'une anesthésie sous hypnose et d'une anesthésie courante  
pour un patient souffrant d'allergies multiples et susceptible aux chocs  
anaphylactiques**

Carlo Antonelli, Marco Luchetti et Luigi De Trana

**Résumé:** Un patient de sexe masculin avait besoin d'une chirurgie pour l'ablation de quatre molaires maxillaires incluses, qui l'empêchaient de mâcher et avaient contribué à l'aggravation progressive d'une névralgie faciale. Deux procédures anesthésiques précédentes avaient entraîné de graves chocs anaphylactiques et la nécessité d'un séjour prolongé au service de soins intensifs. Par prudence, le chirurgien a donc choisi l'anesthésie hypnotique pour ce patient. Le jour de l'intervention, qui avait été précédé de quatre séances de préparation, l'hypnotiseur a provoqué une induction, qu'il a fait suivre de suggestions visant l'anesthésie de la bouche et du reste du visage. Une intubation a été effectuée après l'administration de chlorhydrate de rémifentanyl et de sévoflurane. La chirurgie, qui a duré environ 90 minutes, s'est déroulée sans complications. Le rapport sur ce cas décrit la façon dont une anesthésie courante combinée à une anesthésie sous hypnose peut fonctionner d'un point de vue synergétique et peut se révéler particulièrement avantageuse dans les cas d'allergie médicamenteuse.

JOHANNE REYNAULT  
C. Tr. (STIBC)

**La asociación entre la hipnoanestesia y la anestesia convencional en un paciente con múltiples alergias en riesgo de un shock anafiláctico**

**Carlo Antonelli, Marco Luchetti, y Luigi De Trana**

**Resumen:** Un paciente varón necesitaba cirugía para la ablación de cuatro molares maxilares impactados que prevenían la masticación y que habían contribuido a un empeoramiento progresivo de una neuralgia trigeminal. Dos procedimientos anteriores de anestesia resultaron en episodios severos de shock anafiláctico necesitando una estancia prolongada en una unidad de cuidados intensivos. De ahí que se escogiera la hipnoanestesia como una opción más segura para este paciente. Después de cuatro sesiones de preparación, el día de la cirugía el hipnotista proporcionó una inducción seguida de sugerencias para la anestesia de boca y cara. La intubación ocurrió después de la introducción de remifentanilo y sevoflurano. La cirugía duró alrededor de 90 minutos y procedió sin contratiempos. Este estudio de caso describe cómo pueden trabajar sinérgicamente la anestesia convencional y la hipnótica, y que pueden ser particularmente benéficas en caso de alergias a medicamentos.

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