The Role Of Hypnotherapy In Dentistry

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Abstract

Dental fear is a universal phenomenon justifying the increasing relevance of psychology and the behavioural sciences to dental training and clinical practice.
Pharmacological sedation has been used more and more over the past two decades, in order to relieve dental anxiety and phobia and let the patient face oral surgery safely.
Hypnosis is a still underused but powerful non-pharmacological tool in dentistry. It provides an effective sedation whilst maintaining patient collaboration, but it also may help patients recovering from dental anxiety and phobia as well as those with a severe gag reflex. While pharmacological sedation affords a temporary respite and helps the patient to cope with a single procedure, hypnosis can effectively allow for both an excellent sedation in a physiological way and the treatment of patients' anxiety, or substantially decrease the doses used for sedative and analgesic drugs when these are needed.

Introduction

Undergoing dentistry is stressful, and can cause a relevant increase in anxiety, suffering expectation and pain perception immediately before the operation,[1,2] while intraoperative anxiety and pain are recognised as a causative factor in dental emergencies. Dental fear can be considered as a universal phenomenon with different cultural features.[3] The origin of dental anxiety is multidimensional and includes both endogenous and exogenous causes.[4] The latter is usually caused by dentists' inappropriate behaviour and traumatic dental treatments, leading to patients' feelings of helplessness, threats to their autonomy and personal violation.[5] So the dentist can resemble Janus, the ancient two-faced Roman God of time (the month January takes its name from the God) involved both in the past and the future, in war and in peace: similarly, the dentist may be a peaceful protective authority allowing for pain- and anxiety-free dental care or conversely a warrior-torturer, causing avoidable suffering and creating long-lasting psychological disorders by their inappropriate behaviour. The former is the modern dentist, a 'leader-guide-friend' able to empathically understand a patient's needs and to provide anxiety and pain-free dental care: accordingly, competence in both pharmacological and behavioural techniques for anxiety management have become an essential step in a dentist's development. The Profile of Competences of the European Dentist (PCD), (updated 2009), published by the Association of Dental Education in Europe (www.ADEE.org) states that the dentist, on graduation, is to be competent in (items 6.22, 6.23): a) identifying the origins and continuation of dental fear and anxiety and to manage this fear and anxiety with behavioural techniques; b) selecting and prescribing drugs for the management of pre-operative, operative and post-operative pain and anxiety.

The roles of the common techniques employed in the relief of dental anxiety are summarised in Figure 1: hypnosis is the only behavioural technique allowing for both sedation and treatment of patients' anxiety and phobias, whereas pharmacological sedation affords only a temporary respite, and helps the patient to cope only with a single procedure.

The misperception of hypnosis

Hypnosis has been misunderstood for around two centuries, due to its history and the very terms used to define it. The birth of hypnosis is commonly attributed to Franz Anton Mesmer in the XVIIIth Century, who hypothesised its origin in a sort of *animal magnetic fluid*. However, in all likelihood, the beginning of hypnosis is much older and is mixed up with wizardry, religion, shamanism, all doctrines interested in introspective processes, and able to yield so-called 'altered states of consciousness' (ASC), including fakirs' capability of increasing their own pain threshold up to complete analgesia. A link also exists between hypnosis and eastern techniques of meditation, including techniques of induction as well as brain areas activated and deactivated by meditative and hypnotic activity (Facco, in preparation).

Abbé Faria first recognised that hypnosis did not depend on animal magnetism but on a subject's expectancy and co-operation, and in 1819 stated: *"I cannot conceive how mankind was peculiar enough to search for the cause of this phenomenon in some baquet".* A baquet was a wooden container filled with water, glass, and magnetised iron filings with iron rods protruding from it, which was used in group animal magnetism treatments. Patients simultaneously touched the rods to facilitate the flow of a healing magnetic energy among them.

Then, James Braid (1795–1860), a Scottish physician, in his books *Neurohypnology* and *On Hypnotism* (published in 1843 and 1860, respectively) emphasised the role of the physician-patient relationship, introduced the concepts of suggestion and monoideism

and recognised that the subject cannot be forced to act against his or her will; he also coined the term hypnosis, from the greek ὕπνος (hypnos, sleep).[6,7]

The very term *hypnosis* evokes the wrong idea of a sleep-like condition and loss of control; furthermore, the ill-defined term *trance* has been used for both hypnotised subjects and mediums in spiritualist séances, thus ambiguously suggesting the idea of a paranormal or abnormal phenomenon. Charcot, from his physicalist clinical perspective, defined hypnosis as a sort of "experimental hysteria" and stated that only neuropathic subjects, especially hysteric ones, could be hypnotised: such a definition in terms of psychopathology has certainly helped misunderstanding and to throw discredit on hypnosis. A strong prejudicial stance against hypnosis was also held by the German physician at that time, leading Meynert to say that hypnosis was shrouded in a *"halo of absurdity"* and that even recoveries did not prove anything (quoted by Freud in his introduction to the German translation of the book *Der Hypnotismus* by August Forel and *Hypnosis: De la Suggestion* by Hippolyte Bernheim[8]). Both Freud and Jung, after an initial interest, abandoned hypnosis, feeling not yet confident with it, leading Freud to create and introduce psychoanalysis. Finally, even stage hypnotists, falsely claiming powers over their subjects, have helped to increase an inaccurate perception of hypnosis, leading people to perceive hypnotised subjects as zombies, and under another's power.

The prejudices of the XIXth Century probably sprang from the apparently odd hypnotic phenomenon, which revealed the existence of an unconscious mind conditioning human behaviour (in this regard, hypnosis is to be considered as the Mother of modern psychology and psychotherapy); this was not an easily acceptable fact in a rationalistic post-enlightment epoch, where the intellect and free will were considered the foundations of a human being. These misinterpretations of hypnosis also show the power of beliefs and dogmas even in the world of science, which are often stronger than reality itself, as witnessed by detractors, ubiquitous figures in the history of science: as Albert Einstein wisely stated, *"The only thing that interferes with my learning is my education".*

In short, the very history of hypnosis has given rise to the widespread misperception of it being related to a less than normal or even pathological condition, loss of control, acting like a robot, losing free will and choice. On the contrary, the ability to enter hypnotic-like states is encoded in our brains (or at least the brains of some of us, and also of some animals, like Caretta-Caretta turtles) for a reason. Hypnosis is actually an opportunity to enhance, rather than decrease, control over stress, pain, muscle tension, perception, memories, shifts in mental state, emotions and feelings. Contrary to quite recent belief, hypnosis is not something the hypnotist does to the patient; rather it is an ability he or she can teach to the patient, who can learn and subsequently use the skill autonomously. Thus, according to Spiegel,[9] we should move from the concept of hypnotic induction to the concept of *neuro-hypnotic deduction*, a process leading to transformation (or, better, to "trance-formation"), which in dentistry may involve: a) transforming mental states and improving cognition (i.e. restructuring one's understanding of the problem, which plays a key role in recovering from dental anxiety); b) changing perception of pain up to surgical anaesthesia; c) managing stress; d) modulating neurovegetative reactions.

The role of hypnosis in Oral Surgery

Hypnosis can be defined as a modified state of consciousness (or, perhaps better, a *Non-Ordinary Mental Expression* (NOME); Facco et al. in preparation) springing from the focalisation of attention on an idea (called monoideism) as a result of subject-hypnotist relationship.[10] It yields a wide range of psychic and physical phenomena. For example, hypnotised subjects may experience a feeling of heaviness or lightness of their body or a part of it (the latter leading to arm levitation), eidetic imagination, hallucinations or attentive deficits (neglect), catalepsy, paralysis or unconscious automatic movements, vasodilation, vasoconstriction or blood flow redistribution. They can also modulate their pain perception, from hyperalgesia to analgesia, develop indifference towards pain or even take pleasure in feeling pain (such as in Lesch-Nyhan Syndrome).[11–15] Some of the above mentioned effects of hypnosis are clearly helpful in the dental setting, given the need for managing anxiety, pain and neurovegetative reactions (e.g. heart rate and blood pressure changes, gag reflex). A relevant advantage, unique to hypnosis, is the capability of reaching full relaxation, a deep sedation and in some cases amnesia, whilst maintaining a patient's collaboration: in fact, hypnotised subjects can open their eyes, mouth, move, speak, walk and act just as a normal person even in the deepest levels of hypnosis.

Hypnosis was used for anaesthesia in the early XIXth century,[16] it was then abandoned following the discovery of anaesthetic drugs such as ether and nitrous oxide. In the past decades, it has been reappraised and several papers have been published on the use of hypnosis for sedation and analgesia both in dentistry and several medical invasive procedures, alone, or in combination with drugs, for reduction of post-operative pain, neurovegetative adverse events, for psychiatric disorders and for the support of patients with cancer.[9,17–25] As far as dentistry is concerned, in a prospective randomised study on the use of hypnosis as an adjunct to propofol infusion in third molar extraction, the authors reported a significant reduction in intraoperative propofol administration, patient post-operative pain ratings and post-operative prescription pain relief consumption compared with the control group.[26] In our opinion, these results are far from being meaningful, since hypnosis plus local anaesthesia delivers a very effective sedation and a full analgesia without any need for intravenous sedation, allowing for, a) a patient's complete wellbeing and, b) full autonomy and immediate post-operative discharge without any need for a recovery phase; the latter makes hypnosis both very simple and cost-effective.

The induction of hypnosis is a simple and fast procedure in the hands of an expert hypnotist, calling for less than five minutes (usually 1–3 min), during which the patient is guided towards focusing his/her attention on a single idea, and excluding any external or internal stimuli. During induction, suggestions of general wellbeing, deep relaxation, eyelid heaviness, regular breathing are usually delivered, thus leading the subject to concentrate on their internal environment and to disregard any external stimuli. Their state of hypnosis can be checked by several clinical signals, such as arm levitation, the easing of facial tension, a dropped lower jaw with a slight opening of the mouth, and a reduction in breathing rate. The time needed for subsequent inductions can be strongly decreased by post-hypnotic conditioning; thus, in clinical practice the induction of hypnosis in the dental sessions following the first one becomes very quick and easy, enabling the dentist-hypnotist to obtain full relaxation for their patient almost immediately, that is, in much less time than that required for intravenous sedation.

Besides deep hypnotic relaxation, a hypnotic focused analgesia (HFA) can be obtained in the surgical field. Our previous results have proved that HFA for oral surgery can be effectively obtained, leading to a huge increase in pain threshold in most cases: it has been possible to increase patients' average pain threshold by about 220% with full analgesia assured in up to 45% of subjects, whilst preventing the haemodynamic changes induced by painful stimuli.[13,27,28] Patients

able to develop a full HFA can successfully undergo surgery with hypnosis as the sole anaesthesia[17] with full wellbeing and cardiovascular stability, whilst those with a partial HFA can better tolerate local anaesthesia and other possibly unpleasant sensations during the operation.

As already mentioned, HFA is not a simple psychological dissociation from pain perception but is a genuine block of pain processing as a whole, preventing the cardiovascular responses to pain stimuli, and thus protecting the patient from surgical stress; this feature allows hypnosis to stand comparison with pharmacological sedation. In this regard, it is worth emphasising that cardiovascular responses to trigeminal painful stimuli may yield just the opposite effects to those related to pain in other somatic areas: the well-known sympathetic response to pain in non-trigeminal areas is characterised by vasoconstriction and tachycardia, while painful stimuli delivered in the trigeminal area may lead directly to vasodilation and bradycardia through the trigeminovascular reflex, making haemodynamic syncope the most common emergency in dentistry.[29-31]

Hypnosis also offers the possibility to reduce or abolish the gag reflex, a disorder strongly hampering dental treatment and, in severe cases, resistant to conscious sedation or even deep sedation.[32-34] In most cases, the gag reflex is to be regarded as a sort of panic attack due to high levels of dental fear: vomiting is the last, desperate, unconsciously adopted defence against dentist's perceived aggression. According to his or her hypnotic ability and the severity of their gag reflex, patients can also be quickly trained in autohypnosis and to easily learn to face dental care in full autonomy so overcoming their gag reflex.

Thanks to its analgesic and tranquilising potential, hypnosis is a safe and effective tool in the hands of the modern, trained dentist, who is to be competent in anxiety assessment and management; it also may improve safety by decreasing the cardiovascular response to dental treatments, thus limiting the risk of syncope and offering adequate patient protection without any need for sedative drugs. There are no other available tools so effective, cost-free, always available and devoid of adverse effects, as hypnosis. The only limitation is hypnotisability, but no less than 80% of the population is moderately or highly hypnotisable; the main contraindication is in the field of psychopathology, in borderline syndromes and schizophrenia, where patients may be prone to dissociative effects of hypnotic suggestions or are poorly hypnotisable, being not able to maintain the ribbon of attention to hypnotic tasks.[35]

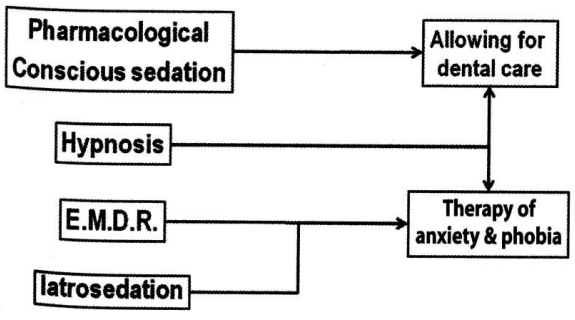

Figure 1: Main techniques for the management of dental anxiety and phobia, and sedation in dentistry (EMDR = Eye Movement Desensitisation and Reprocessing).

Case reports

In dental practice, hypnosis can be effectively used in several settings, ranging from sedation during dental care, to the treatment of phobia in patients who are not even able to face the dental chair and those with a heightened gag reflex. Here, we report on two representative cases, where the narrative aspects of patients' experience and care may provide useful information on the effectiveness of hypnosis.

Case 1. A young lady with a severe gag reflex preventing oral examination was admitted to our dental clinic, with acute pulpitis of her right lower second molar. The first author (EF), who was called by the dentist to sedate the patient, started the interview by asking the patient how she was feeling and, after her reply disclosing a strong anxiety, he told her *"May I help you to start relaxing with hypnosis while the nurse is preparing some drugs and the monitor?"* As anxious patients usually do, she was happy to find a doctor taking care of her (instead of only her teeth) and who was trying to understand her subjective needs, and gave her consent. So the induction of hypnosis was started (about five minutes duration); it included suggestions of deep relaxation, analgesia in her right lower arch and avoided mentioning her mouth (i.e. her mind was encouraged to disregard what was going to happen in her mouth, since this would only give rise to neutral or even unpleasant sensations). The dentist, after the administration of local anaesthesia, started her dental treatment, including the positioning of a dental dam, without any problem, and the intervention was performed uneventfully. The patient was happy, indeed amazed at the result and asked the author to use hypnosis again at further sessions. She was told that certainly the next session would be performed under hypnosis, but, even more importantly, she was helped to realise that she had been able to do everything by herself: the hypnotist did nothing, apart from teaching her how to face the treatment with full self-control and ease, and she had clearly shown herself able to do it, *she had the power to do it herself.*

Just before the next session, the author congratulated her again on her ability to do everything by herself and told her that, as a matter of fact, she was going to be able to face the new session without the hypnotist, simply doing the same as she had done previously: therefore, it was suggested she try to do by herself what she had previously learned, while the author would remain at her disposal throughout to help her, should she have any trouble. The patient agreed to try, sat down in the dental chair and relaxed herself very quickly, allowing for an uneventful endodontic treatment, at the end of which she was even more happy and proud of herself. After this self-training, she became fully autonomous and did not ask again for sedation or hypnosis.

Case 2. This patient was a 42-year-old woman with so severe a phobia that she was not able even to call the dentist to arrange an appointment for a check-up. She had a history of a terrifying dental treatment during childhood, causing her phobia; in turn, it also caused a progressive worsening of her oral health so she could no longer postpone her dental care. She was submitted to two sessions of Eye Movement Desensitisation and Reprocessing (EMDR) plus two sessions of hypnosis to desensitise her, at the end of which she was able to face the first dental visit to plan her dental treatment; it called for the removal of two bridges on teeth 15–17, and 25–27, and the extraction of teeth 15, 18 and 28, followed by implants. She successfully underwent two sessions of oral surgery with hypnosis plus local anaesthesia, for extractions and implants, respectively. As in case 1, the patient was very happy with hypnosis. It provided a unique opportunity for her to realise her capacity to undergo surgery without any sedative drug and resulted in her empowerment,

leading her to spontaneously undergo conservative and endodontic treatment of teeth 23, 25 and 27 without any other help. In her case also, hypnosis was not only effective as sedation but also allowed her to recover from her anxiety and to start dental care in full autonomy.



Figure 2: Hypnosis for sedation in oral surgery in a patient with dental phobia and allergy to latex and lidocaine (the local anaesthesia was performed with mepivacaine plus bupivacaine). The patient was deeply relaxed (as can be drawn from the blank face) and developed a partial amnesia (the intervention, over two hours duration, was perceived as lasting no more than twenty minutes).

Conclusions

The modern dentist, according to the Profile and Competences for the European Dentist (PCD), must be competent in both pharmacological and behavioural approaches to dental anxiety. In this regard, we must emphasise that pharmacosedation does not reduce or eliminate fear, but only temporarily circumvents it, permitting the patient to face the operation. On the contrary, behavioural techniques such as hypnosis and iatrosedation, may help the patients to progressively decrease and eliminate their anxiety, improving their autonomy, self-control and quality of life. In other words, when patients are submitted to pharmacological sedation they perceive that the power is in the drugs used, while hypnosis, when properly performed, provides a unique opportunity for them to realise that they have the power to face the operation with full self-control, tranquillity and wellbeing, with related strong empowerment. Hence, behavioural techniques should be considered as primary when treating the fearful patient, and pharmacological sedation as secondary, and to be used supplementally.

As far as pharmacological sedation is concerned, it is worth emphasising that this topic is not just a simple matter of drug choice: it is a much more complex and wider process starting with the first clinical encounter; while the drug used is only a step, albeit an essential one, in the patient's path to wellbeing. A good empathic approach with behavioural techniques, decreasing anxiety, may allow for decreased doses of sedative drugs when needed, while a negative communication may yield exactly the opposite effects and increase patient fear: this may lead to the use of increasingly higher doses of drugs in an attempt to overcompensate the negative results of previous wrong behaviour. At the beginning of the XXIst century this approach is no longer acceptable, both scientifically, philosophically and ethically.

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