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Research Article

Non-Pharmacological Management of Medically Hypertensive Patient using Clinical Hypnosis while Undergoing Dental Treatment

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Abstract

Introduction: Hypertension is a growing burden on our public health system with more than a million deaths in 2019 being attributed to Hypertension. 47% of American Adults are diagnosed with Hypertension and only 1 in 4 adults can manage this condition controllably.

Previous studies demonstrate efficacy of Ericksonian hypnosis in treating hypertension both by lifestyle changes and perceived stress. Effective management of Hypertension utilizing Hypnosis has been documented as early as 1973.

Case Presentation: A 51-year-old African American male presented to the New York University College of Dentistry for continuation of dental care in the form of restorative care.

Three elevated recordings of Blood Pressure (159/111, 156/109, 158/111) using a Sphygmomanometer, prompted us to discuss treatment alternatives including not rendering dental care. We also discussed with the patient the possibility of Clinical Hypnosis as an aid to reduce Clinical Hypertension. Informed consent was obtained for Clinical Hypnosis and dental treatment. Ericksonian Hypnosis was utilized to induce the patient into a trance state suggesting to him to utilize his imagination in perceiving himself walking in a forest while he was being reclined on the dental chair. Subsequent readings on the Sphygmomanometer showed a successful reduction in Hypertension (155/97, 146/97,148/97) making it safe to deliver dental care. The patient was discharged after completion of dental restorative care satisfied and comfortable.

Conclusions: Hypnosis may be used an adjunctive aid to reduce Clinical Hypertension when treating patient with uncontrolled hypertension to avoid delaying dental treatment.

Keywords :

Hypnosis, Hypertension, Dental Treatment.

Conflicts of interest:

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Introduction:

Hypnosis is a procedure during which a health professional or researcher suggests that a client, patient, or subject experience changes in sensations, perceptions, thoughts, feelings, or behavior. The hypnotic context is generally established by an induction procedure most includes suggestions for relaxation, calmness, and well-being.[1]

There is some evidence that during Hypnosis the brain oscillations get reorganized in the prefrontal cortex and the right occipital EEG channels[2] parts of the brain. Most Hypnosis is self-Hypnosis and there is considerable evidence in literature [3-7] with regards to the efficacy of Hypnosis to reduce Hypertension. This evidence ranges from as early as 1955 [5] and as recent as [7] elucidating the successful treatment of Hypertension using Clinical Hypnosis.

Clinical Report:

A 51-year-old African American male with complex medical history presented to New York University College of Dentistry for restorative work.

Medical History:

Patient has a history of paroxysmal atrial fibrillation, type 2 diabetes, hypertension, focal seizures, thyroid nodules, and major depression episodes.

The patient was on the following medications:

- Lisinopril 5mg
- Zonegran (zonisamide) 100mg
- Lamictal (lamotigrine) 200mg
- Eliquis 10mg
- Coreg (carvedilol) 12.5mg
- Gabapentin 100mg
- Viibryd (vilazodone) 20mg
- Amlodipine 10mg
- Abilify 10mg
- Metformin 500mg

Dental History:

Patient reported brushing 1x per day with fluoridated toothpaste, flossing 1x per day, and use of daily mouth rinse. Patient also reported that he has not seen a dentist since 2019. Patient was missing several teeth #1-5, #12-19, and #32. Patient had previous dental work done on the following teeth: Composite restorations on #20, #28-#31.

Extraoral Exam:

Extraorally, the patient displayed a scar on the right temporal region. Patient informed that the scar was due to an accident from when he was younger. The patient did not display any asymmetry or lymphadenopathy. Temporomandibular joint exam findings and all other aspects of the extraoral exam were within normal limits.

Intraoral Exam:

Intraorally, the patient had multiple composite restorations in the maxillary and mandibular regions (#20, #28-#31). The buccal mucosa presented bilateral linea alba. There was physiological pigmentation on the maxillary and mandibular gingiva. There was moderate gingival inflammation with erythematous gingiva and spontaneous bleeding without probing. Probing depths and clinical attachment levels ranged from 2-9mm with generalized bleeding upon probing in all quadrants. Generalized calculus was present clinically as well as clinical caries.

Treatment Plan:

The treatment plan included extraction of teeth #27, #30, #31 due to an infection, full mouth scaling and root planning and regular maintenance to address the patient's periodontal conditions, oral hygiene instructions, composite restorations on teeth #6 (DIL), #8 (L), #9 (DL), #11 (I), #20 (DO), #22 (F), #25 (I), #28 (DO), #29 (DO), and plan for maxillary and mandibular removable partial denture.

Prior to the patient's initial appointment, the patient was referred to his primary health care provider for a medical consult regarding his atrial fibrillation. The medical consult was required for the surgical extractions of several infected teeth and for removal of caries from decayed teeth.

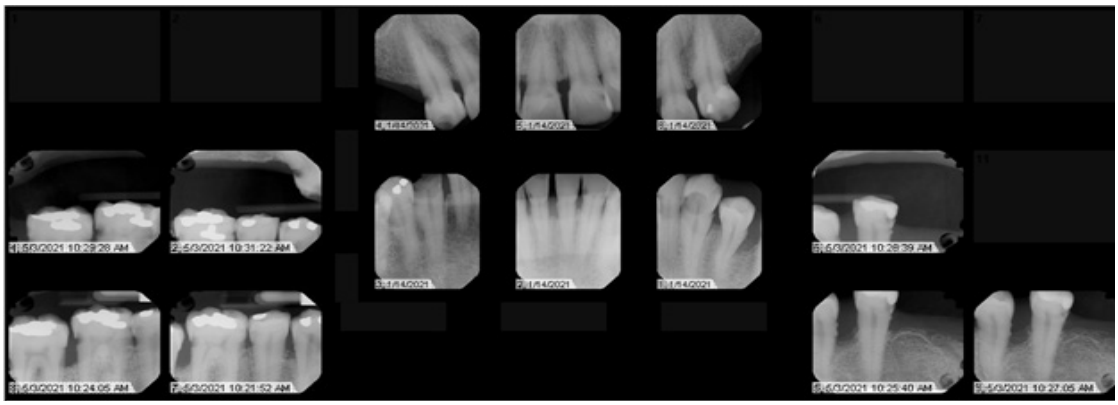

Figure 1: Full mouth series.

Treatment under Hypnosis:

The patient presented to New York University College of Dentistry for restorative dental work. Patient was seated after reviewing the medical consult. Patient informed us that he had forgotten to take his Antihypertensive medication that day. We proceeded by taking the patient's blood pressure on his right arm. The blood pressure reading on his right arm was 159/111. The patient was informed that his blood pressure would be retaken on his left arm in 10 minutes. The blood pressure was retaken two more times on his left arm with the readings of 156/109 and 158/111, recorded respectively. The patient was informed that he might have to be rescheduled for a different day. We reinforced the necessity to be compliant with his medications. Patient was also given the opportunity to undergo Clinical Hypnosis for reduction of Hypertension, to ensure that dental care could be delivered safely.

Informed consent with risks and benefits were obtained verbally and documented in the chart. The patient consented and we started Clinical Hypnosis using Ericksonian technique.

Induction into Trance:

We induced the patient into a trance state using Ericksonian technique by suggesting the patient close his eyes and open himself into his inner world. In this inner world of imagination, we suggested the patient could take a walk. "And if he were to take a walk, where would it be?", we asked him. With his eyes closed, the patient responded that he would like to take a walk in a forest. We deepened his trance state by suggesting that the patient notice the colors of the forest, the fragrance of the forest and how each forest had its unique smell. At this point we used ideomotor signaling to gauge the patient's level of trance by suggesting the patient signal to us with a nod of his head or raise of his finger if he noticed the fragrance of the forest. The patient signaled with a nod of his head that he was smelling the forest and responded to us that he was deep inside the forest.

We began to recline the dental chair and simultaneously suggested to the patient to experience the calmness of forest, the stillness of the forest. We continued to talk to him in a very light and calming tone using voice modulation to deepen his state of trance. After about 10 minutes of Induction and deepening of trance we recorded his blood pressure again. When attempting to put the blood pressure cuff on the patient, we noticed that the patient was in a deep state of hypnosis and was very relaxed as his arm felt heavy. We took his blood pressure three times on his left arm and the readings were the following: 155/97, 146/97, and 148/97, respectively.

The patient had given us consent to do restorative work on Disto Incisal lingual of #6 and Class 5 restoration on #7 prior to Clinical Hypnosis. A local anesthetic was administered via a buccal infiltration using Mepivacaine hydrochloride 3% to limit the use of epinephrine. While administering the anesthesia, we did not see any signs of pain such as flinching. After the anesthesia was administered, we suggested the patient open his mouth as wide as he can so we can place a bite block. After placing bite block and Rubber Dam we excavated caries on Disto Incisal lingual of #6. After the caries were removed, a caries check was obtained. We then applied acid etch with 35% phosphoric acid, bond with Scotch bond, light cured, composite was placed (A2B), light cured, restoration was then polished, and then the rubber dam was taken off.

Once the restoration was complete, we brought the patient out of his state of trance. We told him "It is time to leave the forest" and the patients eyes opened. The moment the patient opened his eyes, the first thing he said was, "What happened to the hole that I had in my tooth right here?" as he was referring to the decay on the incisal edge of tooth 6. We informed him that we restored that cavity along with the adjacent tooth by placing a filling as was discussed in consent stage. The patient was then slowly brought up to an upright position and was allowed to rest for a few minutes. The patient mentioned that he did not feel the anesthetic syringe when administering Mepivacaine. Before dismissing the patient, we took another recording of his blood pressure. His blood pressure was 167/86. The patient was satisfied with the dental treatment, and he was dismissed.

The patient had a follow up appointment scheduled the next day for more restorative work. The patient presented to the clinic with a blood pressure reading of 134/94.

First BP recording under Hypnosis	Second BP recording under Hypnosis	Third BP recording under Hypnosis	Final BP recording before patient dismissal.
			

Table1. Blood Pressure recordings during Hypnosis and dismissal.

Discussion:

As per the CDC, 47% American Adults suffer from Hypertension, with only 1 in 4 Adults (24%) having their condition under control[8]. In 2019, Hypertension was the primary or contributing cause of more than half a million deaths in the United States[8]. As previously stated, studies reporting the efficacy of Hypnosis on controlling Hypertension have been published from as early as 1950s[5].

One such study published in 1973[6], evaluated reduction in Hypertension in patients with varying levels of Hypnotizability, including several skeptics. The study showed a reduction of almost 75% in Hypertension without any use of medications in the no drug group of the study[6]. In the study by Raskin et al[9] published in Journal of Stress Medicine in 1999, when Self-hypnosis was taught to the group of patients previously hospitalized because of Hypertension, they showed greater downward change in diastolic pressure than the monitored group and did not require any upward titration of medications seen in the monitored group not instructed in Self -hypnosis. In the Randomized Clinical trial conducted by Gay, Marie (2007) hypnosis successfully induced reduction in diastolic BP ($p<.003$), systolic BP ($p<.001$), and also brought about a reduction in the anxiety scores ($p<.001$)[10].

Furthermore, study published in Social and Behavioral Sciences in the year 2013[7], evaluated efficacy of Ericksonian Hypnosis in reducing hypertension. The study concluded by reporting that Ericksonian Hypnosis in the experimental group had brought about a series of changes improving the quality of life and perception of stress related to reducing essential and secondary hypertension.

Ericksonian Hypnosis differs from other techniques of Hypnosis by utilizing patient's experiences as resources for therapeutic change. Therapist practicing Ericksonian Hypnosis recognizes that the subconscious mind is the gateway to induce the desired therapeutic change and that the subconscious mind is always listening[11]. Furthermore, Ericksonian Hypnosis utilizes power of suggestion and the individual capacity of a patient to respond to these suggestions as the vehicle of desired therapeutic effect.

In the case illustrated above, we were able to successfully utilize patient's ability to respond to the calmness of the forest to elicit the therapeutic effect of decrease in Blood Pressure. Furthermore, the heaviness of the patient's arm when we recorded his blood pressure was suggestive of catalepsy, experienced by patients during deep states of Hypnosis.

Conclusion:

Hypnosis has been used in the management of Clinical Hypertension successfully in the past and in the most recent times. We were able to utilize Hypnosis successfully in reducing hypertension for our patient and treat him successfully in our clinic. Given the prevalence of uncontrolled hypertension amongst one in four American Adults any dental treatment missed due to uncontrolled hypertension can be avoided by successfully utilizing Hypnosis as an adjunctive therapeutic aid.

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