

Editorial

Hypnosis: a new anesthetic technique!

M.M. LUCAS-POLOMENI MD

Service d'Anesthésie-Réanimation Chirurgicale 2, Hôpital Pontchaillou, Université Rennes 1, Rennes, France

In parallel with its rapid development in psychotherapy, hypnosis also finds applications in anesthesia and surgery. The founding father of modern hypnosis is Milton Erickson, who was born in 1901 and founded the American Society for Clinical Hypnosis. He defined hypnosis as a natural phenomenon that anyone of us can reach. It is an altered state of consciousness based on the principle of dissociation, with a concentrated but focused attention which is different from the state of sleep (1). In fact, hypnosis corresponds to a state of inner absorption and such a focused attention that the individual becomes unconcerned about any other consideration (2). The analgesic effect of hypnosis in pain management has been extensively studied (3). It is used both for acute and chronic pain management in adults (4–6). Indeed at Liege University, in Belgium, Faymonville's team has been using hypnosis sedation that is, use of hypnosis as an adjunct to conscious sedation for surgery performed under local anesthesia since 1992 (7). Hypnosis and hypnosis sedation techniques can easily be adapted to children who have a natural power of playing, and for whom an imaginary world is close and accessible. Anesthetists can have no problem inducing a formal trance in children. Recall of pleasant life experiences has served as the hypnotic substratum.

Preoperative anxiety most often reveals a fear of separation from the parents and familiar environment, the loss of control and also the confrontation with an unknown place and people; this anxiety has significant consequences, especially as it may contribute to the occurrence of postoperative behavioral disorders (8). The most common technique to reduce preoperative anxiety is sedative premedication with

midazolam (9). In our department, hypnosis is used as premedication instead of rectally administered midazolam. This practice has reduced preoperative anxiety and also the incidence of postoperative behavioral disorders (personal data).

We have also used hypnosis sedation with success (hypnosis in combination with conscious intravenous sedation mainly using low dose remifentanyl) and local anesthesia, for example ilio-inguinal/iliohypogastric block for hernia repair. This has proved to be a valuable alternative to traditional anesthesia techniques with halogenated agents, as previously reported in adults (10). The child is asked to choose a pleasant life experience to think about during surgery; the initiation of the relaxation technique itself is simple and usually provides the child with a sense of control. The technique primarily uses indirect suggestions for developing and deepening a hypnotic state; the exact content of the specific suggestions used during the course of induction depends on the patient's behavior and on our judgment of what would most readily elicit a response from the patient. When the child is thought to be at an adequate trance level, i.e. occurrence of muscle relaxation, decrease in heart rate and respiratory rate, local anesthesia is performed. Sometimes small amounts of remifentanyl are given throughout the surgical procedure to facilitate conduct of surgery. At the end of the procedure, the anesthetist can wake up the child from the trance by changing the behavior and quality of the tone of voice.

Our hypnotic technique uses indirect suggestion and distraction to reduce the sensory and affective dimension of the pain experience (11). Suggestion of pleasant experiences seems more effective in producing pain relief than suggestion of declining pain (12). The resulting hypnotic trance almost always involves essential dissociation. This unconscious dissociative mechanism results in decreased pain.

Correspondence to: Dr Marie-Madeleine Lucas-Polomeni, Service d'Anesthésie-Réanimation Chirurgicale 2, Hôpital Pontchaillou, 35033-Rennes cedex 9, France (email: marie-madeleine.lucas@chu-rennes.fr).

Indeed, providing well-being and a relaxed state, enables the children to actively participate in the anesthesia and is likely to leave them with a pleasant memory. This anesthetic technique is based on close collaboration between the patient, the anesthetist and the surgeon. Normal working conditions change dramatically: the operation theatre is calm, the child is conscious but distracted during surgery, although surgical manipulation must be gentle and precise. The anesthetist closely follows the operation to anticipate the patient needs.

There is no question that the phenomenon of hypnotic analgesia is real. In order to better understand what happens during the hypnotic state during surgery, the brain mechanisms underlying the hypnotic state have been studied in healthy volunteers by determining the distribution of regional cerebral blood flow, taken as an index of local neuronal activity. Hypnosis is related to the activation of a widespread, mainly left-sided, set of cortical areas involving occipital, parietal, precentral, premotor and ventrolateral prefrontal cortices and a few right sided regions (occipital and anterior cingulate cortices). The pattern of activation during the hypnotic state differs from that induced in normal subjects by simple evocation of autobiographical memories. These results suggest that, hypnosis is a particular cerebral waking state where the subject, although seemingly somnolent, experiences vivid multimodal, coherent, memory-based mental imagery that invades and fills the consciousness (13,14).

Practicing hypnosis does require some contribution especially in terms of training and competence. It especially calls for information because hypnosis is first and foremost a state of mind; the will to communicate differently and depends on the quality of the relationship between the child and the person performing the hypnosis. There are few contraindications,

the main restrictions being deafness and states of mental retardation. Nonetheless, hypnosis is a very effective technique for providing relief of anxiety and pain in surgery under local anesthesia.

References

- 1 Erickson MH, Rossi EL, Rossi SI. *Hypnotic Realities: The Induction of Clinical Hypnosis and Forms of Indirect Suggestion*. Irvington Publishers Inc., New York, 1976.
- 2 Price D. Hypnotic analgesia: psychological and neural mechanisms. *Science* 2000; **288**: 1769–1772.
- 3 Montgomery GH, DuHamel KN, Redd WH. A meta-analysis of hypnotically induced analgesia: how effective is hypnosis? *Int J Clin Exp Hypn* 2000; **48**: 138–153.
- 4 Iserson KV. Hypnosis for pediatric fracture reduction. *J Emerg Med* 1999; **17**: 53–56.
- 5 Anbar RD. Self-hypnosis for management of chronic dyspnea in pediatric patients. *Pediatrics* 2001; **107**: E21.
- 6 Zeltzer LK, Dolgin MJ, LeBaron S *et al.* A randomized, controlled study of behavioral intervention for chemotherapy distress in children with cancer. *Pediatrics* 1991; **88**: 34–42.
- 7 Faymonville ME, Fissette J, Mambourg PH *et al.* Hypnosis as adjunct therapy in conscious sedation for plastic surgery. *Reg Anesth* 1995; **20**: 145–151.
- 8 Kotiniemi LH, Ryhanen PT. Behavioural changes and children's memories after intravenous, inhalation and rectal induction of anaesthesia. *Pediatr Anesth* 1996; **6**: 201–207.
- 9 Kain ZN, Mayes LC, Wang SM *et al.* Postoperative behavioral outcomes in children: effects of sedative premedication. *Anesthesiology* 1999; **90**: 758–765.
- 10 Schulz-Stubner S. Clinical hypnosis instead of drug-based sedation for procedures under regional anesthesia. *Reg Anesth Pain Med* 2002; **27**: 622–623.
- 11 Erickson MH. The interpersonal hypnotic technique for symptom correction and pain control. *Am J Clin Hypn* 1966; **8**: 198–209.
- 12 Hilgard ER. The problem of divided consciousness; a neodissociation interpretation. *Ann N Y Acad Sci* 1977; **296**: 48–59.
- 13 Marquet P, Faymonville ME, Degueldre C *et al.* Functional neuroanatomy of hypnotic state. *Biol Psychiatry* 1999; **45**: 327–333.
- 14 Faymonville ME, Laureys S, Degueldre C *et al.* Neural mechanisms of antinociceptive effects of hypnosis. *Anesthesiology* 2000; **92**: 1257–1267.