Hypnosis and pain in children

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Hypnosis in children

- It is a wonderful experiential tool
- Used more easily by children than adults because they have blurred boundaries between fantasy and reality
- Maximum hypnotisability:
  - between age 8 and 12
  - under 4 years: distraction
What is hypnosis?

• A feeling of ease or mental relaxation
• An absorbed and sustained focus of attention
• An absence of judging, monitoring, and censoring
• A suspension of usual orientation towards time, location and/or sense of self
• An experience of one’s own responses as automatic
• Allowing suggestions such as those of analgesia

A bit of physiology

Spinal Ganglion
1st neuron

A δ and C fibres

Grey Matter

White Matter

Motor Anterior Root

Rolando Substance sensitive root

Posterior sensitive root

A α and β Fibres
Cerebral activity during pain

Rainville et al., Médecine Science 16 (2000)
Hypnosis and pain modulation

Different mechanisms could take place:

- At the **peripheral level** : hypnosis modulates the nociceptive input by down-regulating A\(\delta\) and C fibres stimulation.

- At the **spinal level** : reduction of the nociceptive reflex RIII, a polysynaptic reflex which is not subject to voluntary control.

- At the **supraspinal level** : modulation of different sites involved in the experience of pain.

- Hypnotic suggestions can modulate directly both the sensory and affective dimensions of the pain perception.
Cortical modulation of pain

Laurent B. Peyron R. Letter of the Institut UPSA of Pain 2002; 17

- Pain is like any sensorial stimuli, submitted to the influence of attention, anticipation, mental imagery, conditionning

- The fronto-cingular areas of the brain, activated by analgesics like morphine or by cortical stimulation, are the same areas solicited by complementary therapies like hypnosis

- This shows the reduction of the dichotomy between the anatomo-biological approach and the psychological approach of pain
Importance of the first procedure (LP or BMA)

Two types of memory

**Implicit memory**
- Unconscious
- A lost souvenir can be recalled through a similar experience and give new sensations and emotions
- Active at all ages,
- Main memory in small children

**Explicit memory**
- Conscious
- The child can recall his pain (site, intensity, duration…)
- Active after the age of 3 or 4

Both memories play a role:
- in the anticipation of the following experience
- in the consequences of the pain
Descending analgesia – When the spine echoes what the brain expects
P Goffaux, WJ Redmond, P Rainville, S Marchand
Pain 2007, 130 : 137-143

- Our expectations concerning pain modify our pain perception
- Our expectations of hyperalgesia completely block the analgesic effects of the descending inhibition on the spinal nociceptive reflexes
- Our expectations act at the spinal level but also on our brain
- The efficacy of valid analgesic procedures can be blocked by anti-analgesic expectancy
Useful ideas

• At the hospital, the child is focused on his anxiety and his pain
• During a procedure he is already in a « hypnotic transe » which the carer can use…This situation creates a « natural » dissociation

• Use whatever the child brings….. His toys… his teddybear…his car….

• Get to know the child (his cognitif level), what he likes, his expectations, his motivation…
Useful ideas

• Have the child participate actively ++++: the technique works better !!!

  – Use touch (Aα et Aβ), the thought of a touch (the wind blowing), of a mouvement…

  - Interact with the child especially if he is young or cognitively impaired
    - Fingers… play with fingers
    - Feet … stepping on feet…
    - Blowing bubbles…

  - Make sure the child is concentrated (or focused) on something else ++++

  - Never abandon the child ++++. Do not stop interacting even if he cries, or shouts….
Hypnosis: a fabulous tool to help the child in pain!

How can this tool help the child?

- by our words (conversational hypnosis)
- by distraction
- by guided imagery with nitrous oxide
- by learning techniques of hypno-analgesia

Keep in mind that when someone is afraid or in pain, he is already in some sort of “hypnosis”, focalised on one part of his body.
The Words to Use
The brain can not hear negative words

« Do not be afraid … »
« Do not worry … »
« It will not hurt … »
« I shall give you the prick and tell you when I will do it.. »

• Be confident…
• What you are living is not easy…..
• Here we are doing what we have to do… while you could just focus and stay in your safe place and be comfortable… in the world of……

The impact of our words:
Conversational hypnosis

• **Can words hurt?** Patient-provider interactions during invasive procedures. E Lang et al. Pain 2005

• **Studies on placebo:**
  - During the post-operative period, verbal suggestions of analgesia were followed by a higher placebo effect (Pollo et al. 2001, with buprenorphine)

  - In patients with an irritable bowel syndrome, suggestions to reduce pain were followed by a higher placebo effect (Verne et al. 2003; Vase et al, 2003)
« Open » and « hidden » treatments

Fig. 3.2 Part (A) shows the analgesic dose of buprenorphine, tramadol, ketorolac, and metamizole needed to reduce pain by 50% (AD₅₀), obtained by means of either open or hidden infusions in postoperative patients. Note that in the hidden conditions, the AD₅₀ increased. (B) shows the time course of analgesia for buprenorphine, tramadol, ketorolac, and metamizole. Note that the analgesic response was smaller with hidden injections. In addition, open injections produced an analgesic response as soon as 15 minutes after administration, while hidden injections did not, indicating that this early analgesic response was due, at least in part, to a placebo effect. From Armanzio et al. 2001 with permission from Elsevier. Copyright 2001.
Focusing attention by distraction

• Distraction and attention :
  • Most used method by the parents
  • Has to be adapted to the child’s cognitive developmental level, and his level of fatigue
  • Using all the sensorial paths ([VAKOG] vision, audition, kinesthesia, olfaction, gustation)

  – Painful complaints are doubled when the parent shows attention
  – Complaints are reduced by 50% when there is a distraction
  – Parents of sick children believe that distraction has a negative effect on their child
Hypnosis and Nitrous Oxide

• The anxiolytic and sedative actions of nitrous oxide help to focus better on some else than the procedure.

• During inhalation the child keeps a verbal contact with the carer.

• Find out what the child wants to « live » during the procedure:

  « a football match, cycling in the forest, a journey with superman, preparing a birthday cake, decorating the christmas tree… »
Hypno-analgesia

• 3 techniques can be used:
  – Suggestions of analgesia or sensorial substitution
    • Glove analgesia, topical anesthesia, switchbox, pain displacement..
  – Suggestions of dissociation
    • Leave your body here and go far away…
  – Suggestions on the way of interpreting the painful sensation:
    • Making the sensation less unpleasant (a tarentula and a migraine)
    • Working with a psychotherapeutic approach on the re-interpretation
Indications of hypnosis: acute and chronic pain

- Hypnosis is complementary to the use of analgesics.
- It helps reduce pain and anxiety and enables the patient to understand his own resources.

- Headaches, migraines
- Abdominal pain
- Musculo-skeletal pain
- Post-traumatic and post-operative pain
- Chronic pain (Sickle cell, Crohn disease…)
- Skin problems
- Etc….

- Self hypnosis
  - Banez 2008

All painful procedures:

- Lumbar puncture and bone marrow aspiration
- Dressings
- Venipunctures… drainage tubes…
- Examining phobic and anxious children
- Hypno-sedation
- Etc….

and any painful episodes

Butler et al, 2005
Kuttner 1998, 2010
Wood and Bioy, 2008
Zeltzer et al, 1982, 2005
Conclusion

Hypnosis:

• Helps the child in reducing his pain and anxiety

• Allows him to cope better, being able to get the « control » over his pain

• Shows him that he has his own resources

• Should be associated to all the treatments given to reduce acute or chronic pain

• Helps to create a collaboration between the child, his family, the nursing team and the hypnotherapist
Les piqûres
Against noise
Nasogastric tubes
Crème magique
Quand je dois avoir des injections qui font mal, j’utilise ma crème magique pour endormir la place où on va me faire l’injection.

De temps en temps la crème change de couleur, ça dépend de son usage.
Lorsque les infirmières ont des difficultés à trouver une veine, je me mets en hypnose et j’imagine que ma veine se lève ainsi.
Si l'infirmière a de la peine à faire venir le sang, j'imagine que j'ouvre un robinet et le sang coule tranquillement comme ça.

Pour fermer le robinet, je le mets en premier sur stop et s'il y a encore quelques gouttes de sang qui restent, je mets un bouchon au robinet pour qu'il ne coule plus.
CD on hypnotic techniques for the parents:
Sanofi-Aventis-Theraplix and the Fondation of France
Pour soulager une douleur aiguë, chronique ou gérer un traumatisme psychologique, Maimouna, Jordan, Colline, Amadou, ont bénéficié de séances d'hypnose. Ce sont des temps forts qui ont transformé leurs vécus. Mais comment fonctionne l'hypnose ? Est-ce un état naturel ? Quelle est son action sur le système nerveux ? Quel est son champ d'application ?

L'action antalgique de l'hypnose est maintenant reconnue. Il s'agit d'un outil de régulation du système de modulation endogène de la douleur.

Ce film a été conçu et réalisé avec le Dr Chantal Wood et Antoine Biou, en collaboration avec l'équipe de l'Unité d'Évaluation et de Traitement de la Douleur de l'hôpital Robert Debré.

Nous tenons à remercier l'ensemble des personnes qui ont participé à ce film.

Un film de 38 minutes
Réalisation : Michèle et Bernard DAL MOLIN

Ce film a été réalisé grâce à la Fondation CNP Assurances

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Un film de Michèle et Bernard Dal Molin

Film made by Michèle and Bernard Dal-Molin, and the Advita Society, and the Pain Management Centre, Hôpital Robert Debré of Paris - France
Financed by the CNP Fondation
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Financed by the APICIL Fondation

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