SFORL guidelines

Non-pharmacological treatment of post-tonsillectomy pain

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ARTICLE INFO

Keywords:
Tonsillectomy
Pain
Non-medical treatment
Behavioral therapy
Local care
Acupuncture

ABSTRACT

Tonsillectomy is a very frequent procedure, particularly subject to postoperative pain that is considered long-lasting and intense. Regulatory changes in the analgesic armamentarium, especially in children, are making the management of post-tonsillectomy pain more difficult. The present article provides an update on non-medical treatments that can be associated to classical analgesia.

Materials and methods: A literature review of all studies of non-medical management in tonsillectomy and postoperative analgesia, without restrictions of date, was performed on the Pubmed and Embase databases.

Results: The treatment modalities described in the 24 selected studies could be categorized as behavioral, local, and general.

Conclusion: Although most studies reported benefit in terms of post-tonsillectomy pain, the small number of studies per category precluded recommendations for current practice. It nevertheless seems useful to consider and assess these techniques, to determine whether they have a role to play in the post-tonsillectomy analgesic armamentarium.

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1. Introduction

Tonsillectomy is a very frequent procedure, particularly in children. Pain is an integral feature of post-tonsillectomy course, and is usually considered intense and lasting 7–10 days [1–4].

The recent guidelines of the French health products safety agency (Agence nationale de sécurité du médicament), dated April 12, 2013, restricted the market authorization for codeine to over 12 years old in case of failure of paracetamol and non-steroidal anti-inflammatory drugs and contraindicated its use in tonsillectomy and adenoidectomy [5]. The therapeutic armamentarium available for post-tonsillectomy pain management has thus been reduced, notably in children.

Several solutions may be considered to improve postoperative analgesia: other analgesic molecules, surgical techniques inducing less pain, and complementary analgesic techniques. A large number of complementary analgesic techniques are in fact implemented by patients, but few have been studied in evidence-based medicine. The present study reviewed the literature to assess complementary analgesic techniques for post-tonsillectomy pain management.

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2. Materials and methods

A literature review using the Pubmed and Embase databases reviewed studies of non-pharmacological treatments, behavioral and assimilated techniques, speech therapy, acupuncture and local oropharyngeal treatments in post-tonsillectomy or other postoperative pain management (without restriction as to organ). Only prospective studies, methodologically correct retrospective studies, cohort studies and literature review were selected for analysis.

3. Results

On the above criteria, 24 publications were selected. Techniques were categorized by concept, to determine the strategies described for post-tonsillectomy pain management.

3.1 Behavioral and assimilated therapies

Concentrating on pain has the effect of amplifying it, so that it is perceived as more intense. Conversely, distraction (music, video games, interaction) may make the pain be perceived as less intense. Walker et al. showed how distraction reduced the intensity of chronic abdominal pain experienced by children [6] (level of evidence 1). Conversely, the more empathetic the parents were with respect to the pain, the more intense it was experienced as being.
The same findings applied to the use of entertainment in post-

Huth et al. demonstrated that coaching children in pain manage-
ment (deep breathing, visual projection, relaxation, music) using
audiovisual supports and books reduced post-tonsillectomy pain
and anxiety in hospital, but that the effect ceased to be significant
after discharge at home [8] (level of evidence 2).

Hypnosis has not been specifically studied in tonsillectomy, but
there have been various assessments in postoperative pain more
generally. A literature review of peri-operative hypnosis in pedi-
atrie general surgery found benefit in terms of anxiety and duration
of postoperative pain [9] (level of evidence 2). If such techniques are
to be used, the parents need to be given appropriate information
and staff need appropriate training [10] (level of evidence 2).

3.2. Local treatments

3.2.1. Cold

Horii et al. [11] (level of evidence 3) reported that rinsing the
tonsillar fossae with physiological saline at 4°C for 10 minutes at
end of surgery significantly reduced immediate postoperative pain.
Likewise, Sylvester et al. [12] (level of evidence 1) reported that
drinking iced water immediately after surgery reduced pain scores
between 15 minutes and 1 hour postoperatively; there was, how-
ever, no residual benefit by the 4th hour.

3.2.2. Mouthrinses, sprays and mouthwashes

Fedorowicz et al.’s 2013 review [13] covered all published stud-
ies of mouthrinses, sprays and mouthwashes in post-tonsillectomy
pain. Five of the 7 selected studies used benzylamide hydrochlo-
ride solutions [14–18], 1 hydrogen peroxide [19] and 1 lidocaine
[20] (level of evidence 1): only the last study reported benefit
in terms of pain, and only for the first 3 postoperative days. The
methodological defects of these studies, however, precluded any
of the treatments being formally recommended.

3.2.3. Honey

Boroumand et al. showed that 5 days’ daily consumption of
honey significantly reduced pain scores and analgesic intake for
the first 3 days following tonsillectomy [21] (level of evidence 1).

3.2.4. Chewing gum

Schiff, in 1987, reported analgesic effects of chewing gum post-
operatively [22] (level of evidence 4). Hanif and Frosha, in contrast,
reported delayed normalization of feeding and increased duration
of post-tonsillectomy pain [23] (level of evidence 1). Chewing gum
should therefore not be used as a treatment.

3.2.5. Speech therapy

Postoperative voice exercises, mobilizing the soft palate muscles
(closed phonemes), with 25 phonemes repeated 10 times a day for
10 days, significantly reduced post-tonsillectomy pain in children
[24] (level of evidence 2). This was, however, a Turkish study, and
the phoneme list is not directly transposable into French – although
an equivalent list could easily be put together.

3.3. Acupuncture and derived techniques

The use of acupuncture in tonsillectomy has mainly been studied
in terms of postoperative nausea and vomiting. Efficacy in terms
of pain has been little assessed.

It is possible to use acupuncture in pediatrics. Adam et al.’s litera-
ture review [25] (level of evidence 2) found moderate side effects
in 11.8% of patients overall, and some severe complications due to
poor implementation.

Stimulation of point P6, by pressure (acupressure), puncture
(acupuncture) or electrically (transcutaneous electrical neurostim-
ulation: TENS), reduced postoperative nausea, but impact on
postoperative pain remains controversial [26–29] (level of evidence 2).

Acar et al. reported application of a capsaicin patch to point HT7
in 2 to 10 years old [30] (level of evidence 2). There was no reduction
in pain score, but reduced agitation after tonsillectomy.

There have been no studies of auriculotherapy in tonsillec-
tomy. One study reported reduced preoperative anxiety in general
surgery [31] (level of evidence 1).

3.4. Other general-route treatments

3.4.1. Homeopathy

Robertson et al., in 2007, reported reduced postoperative pain
after intake of Arnica montana 30ch for the first 7 days following
tonsillectomy [32] (level of evidence 1).

3.4.2. Omega 3, polyamines

There have been no studies in the context of tonsillectomy.
Data on the effects of dietary omega 3, omega-3/omega-6 ratio
and polyamines point to reduced hyperalgesia in chronic pain and
in postoperative pain in general surgery with low-polyamine diet
(orange-based) [33–35] (level of evidence 1).

4. Conclusion

The present literature review found that complementary
techniques exist which could be used in the management of post-
tonsillectomy pain. Most of the studies were methodologically
rigorous, but the small number of reports per technique precludes
formulating recommendations. In the present context of restric-
tion of the analgesic armamentarium, it would be worth examining
some of these techniques, in view of the relative lack of side effects.
Well-conducted prospective studies could confirm or invalidate
the data on complementary techniques presently found in the litera-
ture.

Acknowledgements

French ENT and Head and Neck Surgery Society (SFORL) work
group: Dr Sonia Ayari Khalafallah, Dr Alain Brunaud, Pr Isabelle
Constant, Dr Véronique Deramoudt, Pr Pierre Fayoux, Dr Cécile
Mareau, Pr Rémi Marianowski, Dr Justin Michel, Pr Michel Mondain,
Pr Richard Nicollas, Dr Arnaud Paganelli, Dr Soizick Pondaven, Pr
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