

Title	Anaesthesia techniques for lens surgery
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Aim

The French Association of Health Insurance Funds (L'Union nationale des caisses d'assurance maladie - UNCAM) has asked the HAS to deliver an opinion on the state-of-the-art of anaesthesia practices for all types of cataract surgery.

In view of the general context of this assessment, two main questions were selected:

- question no. 1: define the indications and the non-indications of each of the anaesthesia techniques for cataract surgery;
- question no. 2: determine the practice requirements and the environment necessary for anaesthetic management of cataract surgery.

Methods

This assessment was carried out according to the standard assessment method, which is based on:

- systematic document searches and analysis of data from the synthetic literature (technological assessment reports, meta-analyses, systematic reviews), randomised controlled trials identified, and patient series, cohorts and regulatory texts covering practice requirements and questions relating to organisational aspects;
- consultation of a multidisciplinary working group of healthcare professionals (private and public sector);
- gathering of the point of view of professional bodies (national professional council of ophthalmology, national professional council of anaesthesia and intensive care, college of private practice and hospital pharmacists, French college of nursing), questioned as stakeholders;
- the HAS has not identified any patients' associations working specifically in the field of cataracts likely to appoint user representatives to the working group or to appoint a stakeholder representative;
- the HAS asked the French federation of insurance companies if any complaints or claims had been filed further to lens surgery;
- the compilation of all of these elements in a technological assessment report.

Conclusions

Definitions of indications and non-indications of each of the anaesthesia techniques for lens surgery

The following resulted from the analysis of the elements from the literature selected and from the position of the members of the working group:

- topical anaesthesia +/- intracameral injection with or without sedation is the first-line choice of anaesthesia technique;
 - sedation significantly improves patient comfort (by managing anxiety) and facilitates the surgeon's work by achieving muscle relaxation to compensate for the absence of akinesia,
 - intravenous sedation must be preferred considering that it is more predictable and faster acting compared to oral route, making it compatible with outpatient care. The effects of oral sedation are less predictable, longer and little compatible with the current standard of outpatient care;
- locoregional anaesthesia is indicated in longer cataract surgery especially in cases of complicated cataract surgery (white or brunescant), presence of subluxation, or where combined surgery is planned. Where locoregional anaesthesia is indicated, peribulbar anaesthesia, sub-Tenons anaesthesia or caruncular anaesthesia is recommended. In light of the serious complications, retrobulbar anaesthesia is no longer recommended;
- general anaesthesia is indicated in children and young adults in the event of contraindication to local or locoregional anaesthesia, especially in the following situations:
 - patient presenting with neurodegenerative disease (Alzheimer's disease, Parkinson's disease),
 - patient unable to cooperate (partial or total deafness),
 - patient not able to remain in supine position during the surgery,
 - schizophrenia,
 - pulmonary disease with a risk of coughing during the surgery,

- children and young adults,
- patient with monophthalmia,
- patient with very severe anxiety (especially young adults),
- allergy to local anaesthetics;

The choice of anaesthesia technique is based on the following in particular:

- patient characteristics;
- surgical requirements;
- and the psychological aspects of the patient.

The decision must be discussed between the patient, the surgeon and the anaesthetist.

Practice requirements and the environment necessary for anaesthetic management of lens surgery

Analysis of the data from the literature selected and the position of the members of the working group contributed to the identification of a range of care pathways between the following:

- care pathway 1: during which all anaesthesia techniques are possible (general anaesthesia, sedation, locoregional or local anaesthesia). This care pathway includes the intervention of the anaesthetist and routine programmed anaesthesia visit. The anaesthesia technique is chosen in consultation with the ophthalmologist, the anaesthetist and the patient;
- care pathway 2: this is another care pathway during which the operation can be carried out under topical anaesthesia with or without intracameral injection and without sedation. In this case, the anaesthesia is carried out under the ophthalmologist's exclusive responsibility. This pathway does not include the intervention of the anaesthetist or preoperative anaesthesia visit.

In view of the elements collected for this assessment, it would appear that management of perioperative complications (surgical or non-surgical) is facilitated by rapid anaesthetic management.

Therefore in order to ensure safe care, the HAS recommends a pathway which provides for:

- an anaesthesia visit for all patients due to undergo lens surgery, independently of the chosen anaesthesia technique;
- anaesthesia monitoring for all patients (anaesthetist present on-site, during lens surgery, regardless of the anaesthetic method used).

Organisational perspectives

Cataract surgery is a highly technical procedure requiring several years' practice before an ophthalmologist can operate alone. This surgical procedure must not be seen as commonplace as the complications, when they arise, can have severe consequences, and can even lead to blindness. In effect, considering the low rate of complications (around 2%) and the very high number of operations performed each year (812,561 in 2018), the number of complications is arithmetically high (around 16,000 events).

In order to characterise the risks related to cataract surgery as finely as possible, joint research by the professional bodies involved would appear to be necessary.

However, before being able to use data on the risks related to cataract surgery, and given the high number of operations on the lens, the HAS recommends discussing setting up care pathways for the appropriate anaesthetic management of topical anaesthesia without sedation for lens surgery, to ensure safe patient management.

These adapted care pathways, which should ideally be decided jointly and discussed among the various stakeholders involved, must systematically include:

- an anaesthesia pre-assessment (involving various methods to be discussed, possibly with the contribution of anaesthetists and state registered anaesthetic nurses);
- at least one anaesthetist available on-site during the perioperative period for five patients receiving topical anaesthesia with or without intracameral injection and without sedation (according to various organisational aspects to be defined jointly among healthcare professionals, which may also involve state registered anaesthetic nurses).

This maximum threshold value is at this stage only an initial proposal put forward in order to open subsequent discussions on this subject between the healthcare professionals concerned.

The organisation of appropriate pathways may require new ways of working together in the future, adaptation of current legislation and revision of current methods of remuneration.

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