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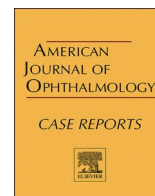
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Case report

Special communication for deaf patients during topical anesthesia cataract surgery

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ABSTRACT

Purpose: To report a new method for communication with deaf patients during topical anesthetic cataract surgery.

Observation: Due to communication difficulty, topical anesthesia was traditionally considered by many cataract surgeons as a contraindication for deaf patients. Retrobulbar/peribulbar-block anesthesia or general anesthesia were recommended. This paper reports a new way of communication using face-tapping and hand-pressing. It worked well with three deaf patients under conventional topical anesthetic cataract surgery.

Conclusion and Importance: The face-tapping and hand-pressing communication technique with deaf patients under conventional topical anesthetic cataract surgery seemed to work well. Topical anesthesia combined with this “touching language” could be an alternative to traditional local block and general anesthesia for deaf patients undergoing cataract surgery. Large studies are recommended to confirm its safety and validation.

1. Introduction

Local block or general anesthesia has been considered standard care for deaf patients undergoing cataract surgery. The author had been using topical anesthesia for deaf patients undergoing cataract surgery combined with face-tapping communication for many years. It has worked well until recently where the author found that face-tapping alone was not always adequate. Hand-pressing was added and integrated into this communication system. Three deaf patients underwent cataract surgery with topical anesthesia using this added technique and it seemed to work much better than relying only on face-tapping.

1.1. Case report

A 63-year-old male with visual complaints was referred for cataract evaluation in December of 2018. Past medical history was unremarkable except being completely deaf since an illness at age 3. On January 24, 2019, routine cataract surgery with topical anesthesia, clear corneal incision and phacoemulsification for his left eye was going well until after capsulorhexis was successfully performed. The patient started to scream, move his arms and attempt to sit up. The surgery was stopped, and the drape was opened so an interpreter could communicate with the patient through sign language. The patient complained that he was not

able to see with the covered unoperated right eye. The patient felt better once he understood the reason why he was not seeing well was due to the covered drape. The surgery resumed and was finished uneventfully.

A simple face-tapping technique has worked well for the last two decades for most of my topical cataract surgery patients who were deaf until the above case event on January 24, 2019. (The author usually has a handful surgical deaf patients each year. Most of the surgeries were under topical except complicated cases, such as one-eyed patient or those who did not have cognitive ability to understand the special communication system.)

- Tapping the nose, the patient should look at the fixation light;
- Tapping the forehead, look up;
- Tapping the chin, look down;
- Tapping the right-side face, look to the right;
- Tapping the left side face, look to the left.

Learning from that example, more detailed preoperative explanation was given both verbally and in writing, including the drape effect on vision in the un-operated eye, and of the following method was added using hand contact between the patient and the interpreter in addition to tapping the face:

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- Pressing the thumb, means the patient is doing well and the surgery is going well;
- Pressing the little finger, means the patient should not move;
- Pressing the center of the palm, asks the patient if he has pain or is nervous. If yes, the patient will press the interpreter's little finger and I will then stop the surgery. The drape will be lifted and the interpreter will communicate with the patient with sign language. If the patient feels fine, then he/she will press the interpreter's thumb.
- If the patient presses the interpreter's thumb, it means that the patient is doing well;
- If the patient presses the interpreter's little finger, it means that the patient has pain or is nervous;

This patient's right eye cataract surgery was performed 3 months later with a routine clear corneal incision and topical anesthesia. Prior to the surgery, detailed protocol was reviewed again through an interpreter. He was quite confident that he would do well this time. Once drape was covered, facing tapping was practiced one more time to make sure that the patient is not over-sedated. The whole procedure went very well with this face-tapping and hand-pressing communication technique.

The same "touching language" technique was used with two additional deaf patients of mine on that same day. All 3 cases went well without any interruption.

2. Discussion

It is well known that there are increased risks in comparison to topical anesthesia when local block anesthesia or general anesthesia is used during cataract surgery. Due to communication difficulty, topical anesthesia was considered by many cataract surgeons to be contraindicated for deaf patients and retrobulbar/peribulbar block anesthesia or general anesthesia was recommended¹.

For partially hearing-impaired patients, we can let the patient maintain a hearing aid on the opposite side of the operative eye with no hearing aid on the side of the operation to avoid possible water damage. For those who only have one hearing aid that is on the side of surgery, operating room protocol in some hospitals is to remove it. Wireless auditory transmitters and receiver devices have been reported to be a successful way to help hearing impaired patients during cataract surgery². Cases of successful topical anesthesia have also been reported in communication deficient patients during cataract surgery³.

We are reporting a new way of communication using face-tapping and hand-pressing combined with detailed preoperative explanation and education for deaf patients during topical anesthesia cataract surgery. Our literature search has failed to find similar communication techniques reported in the ophthalmic literature.

Of note, a few things are important to make this method work:

- The patient must be cognitively able to understand the process.
- Printed instructions with all the technique details should be given to the patient at the office visit so that the patient will have time to practice with a family member.
- Review the technique one more time with the patient just prior to surgery and again after the drape is covered.
- The patient should not be sedated too deeply during the surgery. Where I work, for average non-deaf patients, we typically give 0.5–1 mg versed to each patient in the preoperative area, depending on patient age and comorbidities. In OR, they will get 0.5–1.0 mg versed if they still show signs of anxiety. If they have any ocular or systemic pain, discomfort or chronic cough, they will get 25 mcg to 50 mcg fentanyl. For deaf patient undergoing topical cataract surgery, I usually do not give the average dose of versed as mentioned above. These patients understand that they may feel pressure and be uncomfortable due to being under-sedated. They also understand that if we give them too much sedation, they may not feel any pain or

pressure, but this will impair their ability to use the touching communication.

- Patients should know that if they feel pain or uncomfortable, or if they want to talk to the interpreter/surgeon, they can press the interpreter's little finger. Then the surgery will be stopped, and the drape will be lifted. This can be very reassuring to the patient.

3. Conclusion

The face-tapping and hand-pressing communication technique with deaf patients under conventional topical anesthetic for cataract surgery seems to work well. Topical anesthesia combined with this "touching language" method could be an alternative anesthetic method to avoid traditional local block and general anesthesia for deaf patients undergoing cataract surgery. Large studies are needed to confirm its safety and validation.

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Financial Interest: None. The author does not have any financial or proprietary interest in any material or methods mentioned.

Author declaration

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