15.12.2023THE EFFECT OF PREOPERATIVE ANXIETY LEVEL ON POSTOPERATIVE SORE THROAT IN TYMPANOPLASTIES

## INTRODUCTION

Tympanoplasty is the general name given to operations in which the defect in the tympanic membrane is repaired with a connective tissue graft to correct the pathology in chronic otitis media and its sequelae (1). The pathology in the middle ear and mastoid system may vary from a central tympanic membrane perforation in which the mucosa and ossicles in the middle ear are completely dry to cholesteatoma in which the entire membrane and ossicles in the middle ear are destroyed and sometimes complications such as facial paralysis, labyrinth fistula, meningitis and brain abscess are observed. A simple myringoplasty in which only the perforated eardrum is repaired is the simplest type of tympanoplasty. Radical masteidectomy is the method in which the middle ear and outer ear mastoid system are made into a single cavity (1).

The word "anxiety" is derived from the Indo-Germanic word "angh" which means "pressing tightly, strangling, distress and anxiety". In Turkish, it is used as "bun", "overwhelm", "boredom" or "unpleasant excitement". Anxiety, which decreases the efficiency of the person and causes problems in social relations, and in which physical symptoms such as trembling, heart palpitations, and a feeling of dryness in the mouth occur, is considered pathological (2). Anxiety is an emotional state defined as a restless feeling whose source is usually uncertain. It may cause abnormal haemodynamic changes as a result of sympathetic, parasympathetic and endocrine stimulation. Anxiety and fear increase during the time when patients are waiting for the time when they will undergo surgery (3). It is important to inform the patient about anaesthesia and surgery in the preoperative preparation process. Anxiety negatively affects surgery, anaesthesia maintenance and postoperative recovery. Elimination of anxiety in the preoperative preparation period is important to improve the quality of postoperative recovery and to reduce costs (4). Scales such as State-Trait Anxiety Inventory (STAI: State-Trait Anxiety Inventory), APAIS, Hospital Depression and Anxiety Scale (HADS), and Beck Anxiety Scale (Beck Anxiety Scale), which measure trait and state anxiety separately, can be used to determine anxiety levels.

Postoperative sore throat (POBA) is a common complication of general anaesthesia. Although it is less harmful than other complications, it decreases postoperative comfort of patients and may prolong hospital stay. After intubation, patients may experience complications such as hoarseness, dysphagia, cough and dry throat with POBA (5). The incidence due to tracheal intubation has been reported to be 62% and it is thought to be caused by injury with laryngoscopy or damage to the tracheal mucosa due to cuff pressure (6). Sore throat in the postoperative period negatively affects patient comfort and may lead to an unpleasant anaesthetic experience.

This study aimed to reveal the relationship between preoperative anxiety level and postoperative sore throat and other complications in patients undergoing tympanoplasty.

MATERIALS AND METHODS

A total of 80 volunteer patients who will undergo tympanoplasty under general anaesthesia under elective conditions will be included in the study according to the inclusion and exclusion criteria.

Inclusion criteria:

1- Intubated under general anaesthesia

2- Surgical time ≥30 minutes and ≤ 4 hours

3- 18-65 years old

4- ASA I-II patients will be included in the study

Exclusion criteria:

1- Those who are unable to read and understand the consent form and anxiety assessment scale

2- Previous vocal cord surgery

3- Previous head and neck surgery

4- Pregnant women

5- Patients using steroids

6- Operation time <30 minutes and >4 hours

7- Antidepressant drug users and patients diagnosed with psychiatric illness will be excluded from the study.

Anesthesia Administration:

Demographic data (age, gender, height, weight, body mass index (BMI) and ASA classification will be recorded preoperatively. The trait and state anxiety scale (STAI-T and STAI-S) will be administered at the preoperative visit. Standard anaesthesia monitoring (electrocardiogram-ECG, noninvasive blood pressure-NIBP, pulse oximetry-SPO2, temperature, EtCO2- End Tidal Carbon Dioxide), neuromuscular monitoring (TOF) will be performed before anaesthesia induction. These data will be recorded at 5 minute (min) intervals from the beginning to the end of the operation. A vascular access of appropriate width will be opened and 10 ml/kg balanced crystalloid fluid infusion will be started. Lidocaine 1 mg/kg, fentanyl 1 mg/kg propofol 2-3 mg/kg and rocuronium 0.6 mg/kg will be administered intravenously (IV). Then, when the Train of four rate (TOFR) response is zero, orotracheal intubation will be performed with Macintosh bleyd 3 or 4 by selecting straight tubes with an inner diameter of 8.0-8.5 mm for male patients and 7-7.5 mm for female patients. (In case of neuromuscular blocker requirement, rocuronium 0.1 mg/kg IV will be administered additionally. Endotracheal tube (ETT) cuff pressure will be adjusted to 20-30 cmH2O with a cuff manometer. ETT cuff pressure will be measured at 20 minute intervals and recorded in the file. Anaesthesia maintenance will be performed with 0.5 L/min fresh gas flow, oxygen concentration with inspiratory oxygen level between 40-45, sevoflurane with a minimum alveolar concentration (MAK) of 1.0. Mechanical ventilation will be performed with Volume-Auto Flow mode with $EtCO_2$ between 35-40 mmHg. Analgesia maintenance will be provided with remifentanil infusion (0.6-15 mcg/kg/hour). In case of (±) 15% change in the haemodynamic parameters of the patient compared to the baseline values, remifentanil (Rentanil 2 mg-VEM drug) infusion dose will be intervened by increasing and decreasing at the specified intervals and the amount consumed intraoperatively at the end of the operation will be recorded. Hypotension will be defined

as hypotension when systolic arterial pressure decreases by 30% compared to baseline. In the treatment, 250 ml of 0.9% NaCl rapid infusion will be administered first. If no response is obtained, 10 mg ephedrine IV (Ephedrine Hydrochloride 0.05 g/1 ml-Osel drug) will be given. When bradycardia occurs (heart rate ≤50 beats/min), atropine 0.5 mg IV (Atropine Sulphate Onfarma 0.5 mg/ml) will be administered.

Paracetamol 10 mg/kg and tramadol 1 mg/kg will be administered before the operation is terminated. Fresh gas flow will be increased to 8 L/min at the end of the operation. Sugammadex 4 mg/kg will be administered IV to terminate neuromuscular blockade. When TOFR is 0.9, the patient will be extubated and transferred to the postoperative recovery unit (PACU). Patients with Aldrete score ≥ 9 will be transferred from PACU to the ward.

The time from skin incision until the end of the surgical procedure will be recorded as "Operation Time". The time between the termination of sevoflurane (Sevorane 100% inhalation solution) flow and extubation will be recorded as "Extubation Time", and the time between anaesthesia induction and extubation will be recorded as "Anaesthesia Time". The time between the patient's admission to the PACU and discharge to the ward will be recorded as "Recovery Time".

Postoperative complaints of sore throat, hoarseness, cough, nausea and vomiting will be recorded at 0, 2, 4 and 24 hours using numerical rating scales (NRS). After the end of follow-up, the patient will be divided into two groups according to anxiety level (7). The intraoperative data and postoperative complication status of the volunteers will be followed up by an anaesthesiologist who is not aware of the results of the anxiety rating scale and recorded in their files.

All patients will be asked whether they have sore throat at 0, 2, 4, 12 and 24 hours postoperatively. Patients will be asked to give a score between 0-10 for sore throat.

All patients will be asked whether they complain of hoarseness at 0, 2, 4, 12 and 24 hours postoperatively. Patients will be asked to give a score between 0-1-2-3 for hoarseness.

All patients will be asked about cough at 0, 2, 4, 12 and 24 hours postoperatively. Patients will be asked to give a score between 0-1-2-3 for cough complaint.

All patients will be asked about nausea and vomiting at 0, 2, 4, 12 and 24 hours postoperatively. Patients will be asked to give a score between 0-1-2-3 for nausea and vomiting.