

# Nursing intervention to prevent hyperbaric oxygen

## Effect of treatment on middle ear air pressure injury

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**Abstract:** [purpose] Explore the effect of nursing intervention on preventing the middle ear air pressure injury caused by hyperbaric oxygenation. [method] will Example the first hyperbaric oxygen treatment for patients was randomly divided into control group and Observer Group. Example, Control group given general care, The observation group implements a series of nursing interventions based on the control group, Compare the incidence and injury of middle ear air pressure injuries in two groups of patients degree. [result] The incidence of air pressure injury in the observation group was lower than that in the control group, less damage than control group, There is a statistically significant difference between the two groups ( $P < 0.01$ ). [conclusion] High to treat patients with active nursing interventions, Can effectively prevent the occurrence of middle ear air pressure injury.

Keyword: Hyperbaric Oxygen; Middle Ear pneumatic injury; Nursing Intervention

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pressure in hyperbaric oxygen treatment due to changes in ambient pressure causing drum indoor and outdoor pressure imbalance causing middle ear pressure, is hyperbaric oxygen treatment common side effects, Show ear jam, Ear Expansion, earache, bad reverse of tympanic membrane congestions should, Severe earache Severe, Unbearable, The even has a perforation of the eardrum<sup>[1]</sup>, Sendsickness rate 10.0%~20.3%. Middle ear air pressure injury not only increase patient treatment pain, Severe can cause hyperbaric oxygen treatment interruption, affects the patient prognosis. to prevent middle ear pressure injuries, Guarantee Patient treatment Annal, Our hospital takes a series of positive care for patients undergoing hyperbaric oxygenation treatment Author Introduction Shihung, Deputy Chief Protector, Bachelor's, Unit: 547000, Guangxi Zhuang Autonomous Region Hechi People's Hospital.

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[J]. General Care, 2017, 15: 4519-4521.

Intervention, get good results. This is now reported as follows.

## 1. Data and methods

### 1.1 Data Selection 2015 Year 1 Month one 2017 Year 5 Month in this

patients hospitalized with hyperbaric oxygen therapy for the first time Example, where the male Example, female All Example; Age years old ~ year old (43.5 year old  $\pm$  10.2 year old) Text degree: Junior High and above, Example, Junior High School below Example; disease Distribution: dizziness 8 example, Migraine Example, neurovascular Headache Example, One-oxygen Carbon poisoning example, Cerebral infarction Example; All patients are eligible for The Chinese Medical Association Hyperbaric Oxygen Branch developed the Hyperbaric Oxygen treatment adaptation certificate, all give treatment pressure 0.2 MPa, Mask Suction pure oxygen min (include pressure and decompression each min, Middle Break Ten min) Hyperbaric Oxygen treatment therapy. to Group standard: conscious clear, enables language communication, first line high oxygen-Pressure treatment, Bilateral tympanic membrane complete, no inset, no perforation, flag Clear, No cognitive impairment and psychiatric history, Active cooperating; exclusion standard: Meaning ambiguous, Language, Awareness, Mentally handicapped, has hyperbaric oxygen

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treatment taboocertificate and use ephedrine contraindications. Assigncases to randomly divided into Group and observer groups each\$Example, Two groups of patients at age, Sex, culture Difference between degree and disease distribution no statistically significant ( $P > 0.05$ , has comparison).

1.2 method to give hyperbaric oxygen routine care to control group, that is, the patient is high hyperbaric oxygenation for treatment purposes, method, effect, Note items, Health Education related to adverse reactions, and pinch nose drug gas, Swallow, methods and psychology of preventing middle ear air pressure injury by yawning and other pressure Care etc. The Observation Group is based on general care in the control group, before treatment I start points 3 Stage Care intervention, Specific actions are as follows.

1.2.1 Evaluation and training before the treatment 1 D The responsible nurse makes the patient Hyperbaric oxygen, cognition and psychological status of related knowledge of middle ear pressure injury evaluate, targeted health education and heart based on patient's cognitive level ignore. by demonstrating, imitating, Play video and other methods to guide the patient into the line ear pressure balancing action training, that is, swallowing action-Open mouth to move jaw-Top play yawn-valsava Action (To take a deep breath and close the glottis, Pinch the nose then force the Exhale action, until fully mastered, Instruct it to go to treatment keep practicing before.

1.2.2 Situational Experience Hyperbaric oxygen treatment before remind send patients to Hyperbaric Oxygen Chamber after, with hyperbaric oxygen-nurses\_ Take care of the patient., cooperation points, The re-education of content such as ear pressure balancing training. First high-pressure the patient with oxygen treatment is susceptible to the special conditions of hyperbaric oxygen treatment. Psychology let patients visit before treatment hyperbaric oxygen cabin condition, Understanding Cabin Internal structure, contact intercom inside and outside cabin, monitor and camera etc prepare, Watch other patients' treatment from monitor, to ease or fade In addition to its tension, negative emotions for fear, enhance the environment for hyperbaric oxygen treatment due.

1.2.3 Ephedrine Nasal drops before entering the cabin Ten min apply ephedrine nasal drops, patient Lianping supine position, scapula Cushion Pillow, head no cushion pillow, head to left, right flank side 45° to about 0.15 ML include 1.5 mg Ephedrine 1% Ephedrine hydrochloride nasal drops 3 Drop don't drip in the nasal cavity of the lower side, each side maintained after drop 1 min ~ 2 min then prostrate, to facilitate liquid absorption.

1.2.4 To arrange patient seating and experience after cabin intervention in the cabin adjacent to old patients, with old with new, Increase the security of the patient, nurse should Contact the cabin patient at any time, ask for any discomfort, The is in a timely state of mind. Guide to notify the patient to keep doing the ear-pressure balancing action when pressurization, every 1 min Ask and remind 1 Times. during treatment, continuously play music in cabin, Beautiful and healthy music can make human secretion beneficial to regulate blood flow, Eliminate function and nerve reflex hormones and enzymes, can distract the patient., easing treatment Tension, fear and worry, make body and mind relaxed, Smooth end into voltage regulation<sup>[4]</sup>.

1.3 Effect Evaluation observation compare two groups of patients 1 days after treatment Ear injury Incidence and severity. page 1 Day treatment End, Patient ask for extra pressure during decompression with no ear pain, ear Jam, expansion case the condition of the double eardrum membrane is observed by the ear-nose and throat surgeon using the electric ear microscope and complete record. Middle ear air pressure injury and degree of injury reference to pressure injury otitis media Diagnostic criteria<sup>[5]</sup>: has earache, Ear Expansion, Ear Blocking, performance such as hearing loss; have tympanic membrane inset, signs of congestion or rupture or tympanic fluid buildup; where [earache] lighter, ears have a feeling of tightness, Eardrum inset, The middle ear mucous membrane hyperemia is light degree; earache severe, has tinnitus, ears are blocked, extensive hyperemia of the eardrum, The lumen has exudate to moderate; eardrum rupture, Sharp Earache suddenly disappears, hemorrhagic exudate flows out of the outer ear for heavy degrees.

1.4 Statistical methods use SPSS 13.0 Statistical software for data process, count data with  $\chi^2$  check, Degree of damage with rank and check, with  $P < 0.05$  is statistically significant for the difference.

## 2. Results

2.1 Comparison of the incidence of Middle ear air pressure injury in two groups of patients  
Observation Group occurrence 1 example, occurrence 2.0% (2/50), control group occurred 12 example, occurrence 24% (12/50), There are significant differences between the two groups.  $\chi^2=5.73, P<0.01$ .

2.2 Comparison of injury severity of middle ear air pressure in two groups of patients

### 3. Discussion

Hyperbaric Oxygen treatment is a hyperbaric oxygen compartment that places the patient in a high-pressure environment inside, reach cure disease by breathing and ambient pure oxygen, This procedure is divided into for pressure, voltage and decompression three phases, in the pressurized phase of the oxygen chamber, because of the external pressure rising, the pressure of the tympanic membrane decreases the formation of negative pressure gradually getting bigger, Cause the outer air cannot enter the middle ear to cause tympanic membrane injury, mainly occurs during pressurization phase, The first hyperbaric oxygen treatment patients see more. to prevent the first hyperbaric oxygen treatment for patients with middle ear pressure injury, before treatment I'd to the patient through the strengthening of hyperbaric oxygen related knowledge of health teaching education, Improve patient awareness of hyperbaric oxygen Therapy, directs the patient to the ear pressure balance Action training, After training, the patient can be mastered, on When pressurized, the patient can perform the ear-pressure balancing action so that the patient can swallow the drum. To open the function of regulating pressure, to stabilize the tympanic pressure, prevent The occurrence of a middle ear pressure injury. the eustachian tube pharyngeal mouth is located on the nasopharynx side wall, and pharyngeal lymphoid tissue Rich, fold more<sup>6</sup>, We are dropping ephedrine To give a flat-top head left, Right Turn 45° Posture, The solution can bedown the outside side of the nasal cavity, drop to pharynx on the side of nasopharynx through nasal posterior hole around drum orifice and here retention, When ephedrine works, It's good for swallowing. Open drum tube opening, Auxiliary ear pressure balance action in favor of Eustachian tube opens to prevent middle ear pressure injury. the situational experience can be used to make the patient familiar with and understand the use of the environment and facilities in the hyperbaric oxygen compartment by and a Solution for others ' treatment procedure, reduce their fear, first treat patients See the huge cabin, hear all kinds of airflow cause tension, fear, char consider negative emotions to make the palate,, throat muscle coordination Drop, cause the eustachian tube pharyngeal opening, The gas does not go smoothly into the eardrum room, Drum Indoor and outdoor pressure cannot reach balance, is the that causes a middle ear pressure injury reason<sup>[4]</sup>, Our education by visiting time, Psychological grooming, Treat Previous story experience, Timely psychological guidance for patients during treatment and soundle intervention can effectively relieve patients ' negative psychological emotions, pre-Prevent middle ear pressure injury from occurring. from the results of this study, Observation Group The incidence of ear pressure injury is lower than the control group, Less damage than control group, There are statistically significant differences between the two groups (corpcse < 0.01), Tips for high-voltage oxygen treatment for patients with active nursing interventions, can be effectively prevented Ear barometric injury occurrence.

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