

Middle Ear Barotrauma

OCTOBER 2021

SerenaGroup
Building the Nation's Leading Wound Care Team

 **Deborah**[®]
Heart and Lung Center

Barotrauma



Barotrauma to the ear is the most common complication of Hyperbaric Oxygen Therapy.

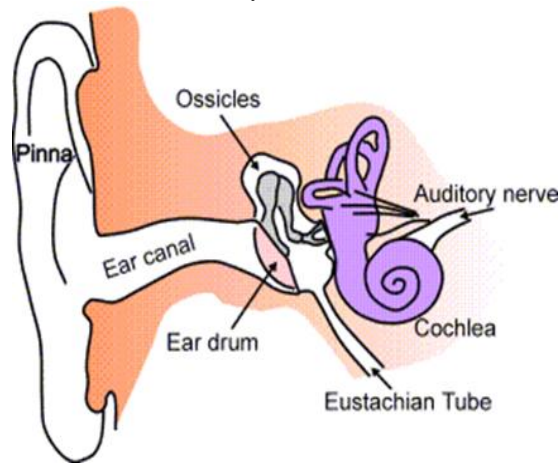
Classification system for the degree of ear squeeze is based on the appearance of the ear drum devised by Wallace Teed, a US Navy Submarine Medical Officer during World War II

- Teed 0-Symptoms with no physical findings
- Teed 1- Erythema or injection are the handle of the malleus
- Teed 2-Erythema or injection of the entire tympanic membrane
- Teed 3-Hemorrhage in to the tympanic membrane appearing as bright red patches.
- Teed 4-Deep blue/black appearance of tympanic membrane due to blood filling the middle ear with possibility of rupture present.
- Perforated ear drum.

Eustachian Tube

The Eustachian tubes have slit like openings, these openings may close tighter if not open actively by:

- Swallowing
- Yawning
- Performing the Valsalva maneuver, Toynbee maneuver, or Lawry techniques.



Maneuvers

- **Valsalva Maneuver** - is one of the effective ways to equalize your blocked ears. Pinching your nostrils and exhaling through it allows high pressure to pass in the Eustachian tube.
- **Toynbee Maneuver** - In this method, all you have to do is to pinch your nose then swallow. When you swallow, you're pulling the Eustachian tubes open. And the movement of your tongue with your nostrils blocked compresses air against the Eustachian tube. Thus, equalizes your ear.
- **Lowry Technique** - This is Valsalva maneuver and Toynbee maneuver joined together. Pinch your nose, blow, then swallow.



Experiencing Pain?



If the patient is experiencing pain beyond mild discomfort (mild to moderate pain levels) use the following techniques:

- Stop the pressurization and decrease pressure to the point of no pain.
- Communicate with the patient equalization techniques while continuing to pressurize once patient states they have no more pain or discomfort.
- If the patient is unable to relieve the pain or the pain is severe stop the pressurization or decompressing and remove patient from chamber and have overseeing Hyperbaric physician examine the patient.



Question 1

Question: What is the most common complication of HBOT?



Answer 1

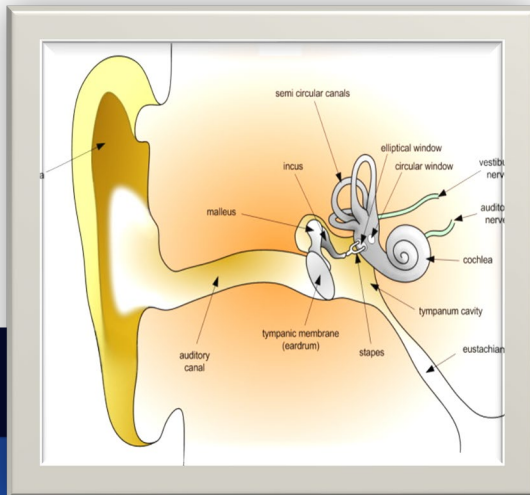
Question: What is the most common complication of HBOT?

Answer: Barotrauma

Barotrauma is physical damage to body tissues caused by a difference in pressure between a gas space inside, or in contact with, the body.

Question 2

Question: The TEED scale was developed to assess patients with potential oxygen seizures.



Answer 2

Question: The TEED scale was developed to assess patients with potential oxygen seizures.

Answer: False

Teed scale is a classification system for the degree of ear squeeze based on the appearance of the ear drum devised by Wallace Teed, a United States Navy Submarine Medical Officer during World War II.



Question 3

Question: Patients should be instructed not to equalize during _____.



Answer 3

Question: Patients should be instructed not to equalize during_____.

Answer: Decompression. “...make sure the patient does not try to clear while the chamber is decompressing.”

Question 4

Question: Equalizing techniques include all of the following except:
Valsalva, Yawning, Blinking, Swallowing?

Answer 4

Question: Equalizing techniques include all of the following except:
Valsalva, Yawning, Blinking, Swallowing?

Answer: Blinking, all others are equalizing techniques.

Question 5

Question: Hemorrhage in the tympanic membrane is classified as TEED 1.



Question 5

Question: Hemorrhage in the tympanic membrane is classified as TEED 1.

Answer: False

Teed 3-Hemorrhage into the tympanic membrane appearing as bright red patches



SERENAGROUP HYPERBARIC LEADERSHIP

Matt Schweyer, Chief Compliance Officer | VP Head of Compliance, Reimbursement & Safety | National Safety Director

- mschweyer@serenagroups.com
- C. 214-315-5109

SerenaGroup Education Committee

- Nick Duquette
- Ally George
- Blair Flinn
- Nancy Trafelet
- Jill Schroder



HBO Show Rate September 2021

Center	Program Director	Show Rate Percentage
Akron	Nick	85%
ACMH	Lisa	93%
Berkshire	Sean	97%
CHI Health CUMC/Bergan	Joe	
CHI Health Mercy	Joe	
Deborah	Megan	53%
Fairview	Jamie	100%
Henry Ford	Eliece	100%
Jackson	Dean	91%
St. Mary's	Katie	93%
Via Christi	Nancy	100%
Inspira – Elmer	Ally	95%
CHI Health St. Elizabeth	Joe	
Chambersburg	Ginger/SG	

HBO Upcoming Courses

Register at
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"96% of patients who responded favorably after being treated with HBOT for radiation Cystitis had a durable freedom from symptoms."

Sako Y et al. Hyperbaric oxygen therapy for hemorrhagic radiation cystitis. *Int J Radiat Oncol Biol Phys* 2013; 85: 55-8

40-HOUR HBO COURSE

- November 4-7, 2021 | Toledo OH
- November 11-14, 2021 | West Palm Beach FL
- December 2-5, 2021 | Opelousas LA



SG

Next
Presenter

Date: November 16, 2021

Presenting: Jackson Hospital

Topic: Patient Education

