Balloon Dilation of the Eustachian Tube

Policy MP-005

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Disclaimer:
1. Policies are subject to change without notice.
2. Policies outline coverage determinations for U of U Health Plans Commercial, and Healthy U (Medicaid) plans. Refer to the “Policy” section for more information.

Description:
Balloon dilation of the Eustachian tube is a tuboplasty procedure intended to improve the patency of the cartilaginous Eustachian tube. During the procedure, a saline-filled balloon catheter is introduced into the Eustachian tube through the nose using a minimally invasive transnasal endoscopic method. Pressure is maintained for approximately two minutes after which the balloon is emptied and removed. The procedure is usually performed under general anesthesia.

Policy Statement and Criteria
1. Commercial Plans
   U of U Health Plans does NOT cover balloon dilation of the eustachian tube as it is considered investigational/experimental for the treatment of any condition.

2. Medicaid Plans
   Coverage is determined by the State of Utah Medicaid program; if Utah State Medicaid has no published coverage position and InterQual criteria are not available, the U of U Health Plans Commercial criteria will apply. For the most up-to-date Medicaid policies and coverage, please visit their website at http://health.utah.gov/medicaid/manuals/directory.php or the Utah Medicaid code Look-Up tool

Clinical Rationale
Eustachian tube dysfunction (ETD) is a disorder for which there are limited medical and surgical treatments. Recently, Eustachian tube balloon dilation has been proposed as a potential solution. Hwang et al, 2016 performed a systematic literature review. Abstracts were selected for relevance, and pooled data analysis and qualitative analysis was conducted. A total of 9 prospective
studies, describing 713 Eustachian tube balloon dilations in 474 patients (aged 18 to 86 years), were identified. Follow-up duration ranged from 1.5 to 18 months. Ability to perform a Valsalva maneuver improved from 20 to 177 out of 245 ears following Eustachian tube balloon dilation and, where data were reported in terms of patient numbers, from 15 to 189 out of 210 patients. Tympanograms were classified as type A in 7 out of 141 ears pre-operatively and in 86 out of 141 ears post-operatively. The authors concluded that prospective case series can confirm the safety of Eustachian tube balloon dilation. As a potential solution for chronic Eustachian tube dysfunction, further investigations are needed to establish a higher level of evidence of efficacy.

Additional studies have attempted to determine the safety and effectiveness of Eustachian tube balloon dilation for treatment of Eustachian tube dysfunction. Studies include a 2015 retrospective cohort study by Gurtler et al, a 2015 retrospective analysis by Maier et al, a 2015 meta-analysis and systematic review by Radnrup, Ovesen et al. All studies concluded balloon tube dilation showed promise and appeared to have some level of efficacy but felt further study necessary to identify long term efficacy and define the definitive value of the procedure. Several of these studies concluded that additional randomized, controlled trials were necessary as much of the evidence is retrospective cohort reviews.

In 2015 publication, the Food and Drug Administration (FDA) summarizes more adverse events. Two-hundred ninety-nine patients who were treated with ETBC were included in the safety analysis (80 lead-in patients, 149 patients randomized ETBC, 70 patients randomized to medical management who received ETBC). There were 16 non-serious device or procedure-related adverse events in 13 patients most commonly, epistaxis and ETD. Two patients had 3 potentially device-related adverse events: mucosal tear worsened ETD, and conductive hearing loss. The potential device- or procedure-related adverse events were mild or moderate in severity and resolved without sequelae. Five serious adverse events were reported (4 events in the BDET group, 1 event in the medical management group); all were thought to be unrelated to device, procedure, or medications.

A 2017 UpToDate review on “Eustachian tube dysfunction” (Poe, Hanna et al) states that “The choice of management strategies for isolated Eustachian tube dysfunction remains controversial as randomized trial data are limited, study outcomes vary widely between studies, and much of what is known about the treatment of Eustachian tube dysfunction comes from animal rather than human studies. Balloon dilation is a novel tuboplasty method to increase the patency of the cartilaginous Eustachian tube. Similar to the concept of balloon sinuplasty for the treatment of chronic sinusitis, a balloon catheter is used to dilate the cartilaginous portion through a minimally invasive transnasal endoscopic approach. Initial cadaveric studies and clinical trials are promising. A 2015 systematic review including 9 case series (443 patients) concluded that balloon tuboplasty is a safe procedure but is still lacking good evidence of benefit”

More recent reviews include a systematic literature search by Huisman, et al, 2018 and Hayes, 2017, systematic reviews on both the Bielefeld and the Acclarent Eustachian tube balloon dilation procedures. The Huisman review was based on title and abstracts, and resulted in 36 articles included in the review. These articles were screened as full text, 15 of them were eligible for critical appraisal. Data were extracted from selected studies and presented. A meta-analysis was conducted for four subgroups. A total of 1,155 patients were treated with balloon dilation of the tuba auditiva. Outcome parameters were relief of symptoms, otoscopy, Valsalva maneuver or Toynbee test, audiometry, tympanometry, Eustachian tube dysfunction classification, and Eustachian tube score. All articles showed short-term improvement of original symptoms; some showed further improvement over time. Follow-up ranged from just after therapy to 50 months. Relatively mild and self-limiting complications were described in 36 patients. All current studies suggest that balloon dilation of the Eustachian tube can be a helpful
treatment in patients with Eustachian tube dysfunction. However, placebo controlled trials are still warranted.

The 2017 Hayes reviews similarly concluded there remained unanswered questions regarding the effectiveness of this therapy. In the case of the Bielefeld catheter system, the efficacy of ETBD does not allow for definitive conclusions due to a very-low-quality body of evidence provided by one randomized controlled trial and a number of single-arm observational studies with substantial limitations. Similarly the efficacy of ETBD in the Acclarent system, did not allow for definitive conclusions either by small single-arm observational studies.

Applicable Coding

CPT Codes
No applicable codes

HCPCS Codes

C9745  Nasal endoscopy, surgical; balloon dilation of eustachian tube

References:

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