



# Surgery for Otitis Media with Effusion: A Survey of Otolaryngologists Who Treat Children in Brazil

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## Abstract

**Introduction** Myringotomy and ear tube placement (MTP) is the surgical treatment for otitis media with effusion (OME), and it is the most common surgery performed in children. Several guidelines have been developed to assist in the care of patients who become candidates for MTP.

**Objectives** To evaluate the practice of Brazilian otorhinolaryngologists when performing MTP according to the years of clinical experience. Secondly, we also want to assess if their practice regarding MTP varied according to the percentage of children treated and the location of their practice.

**Methods** A 30-question survey was sent to otolaryngologists affiliated with the Brazilian Academy of Pediatric Otorhinology (Academia Brasileira de Otorrinolaringologia Pediátrica, ABOPE, in Portuguese) and/or the Scientific Department of Otorhinology of the Brazilian Society of Pediatrics (Sociedade Brasileira de Pediatria, SBP, in Portuguese). The questions included were carefully chosen to provide a profile about the practices adopted in the pre-, peri- and postoperative periods of MTP.

**Results** The questionnaire was sent to 208 otolaryngologists, and there were 124 (59.6%) respondents. Of those, 59.7% use antiseptics before surgery. Only 54 otolaryngologists, less than half of the subjects in this study (43.5%), always place a tube during the procedure. More physicians who practice in small cities recommend water precautions after MTP when compared to other physicians ( $p < 0.001$ ).

**Conclusion** The present study reveals that many respondents do not follow some of the recommendations of the current guidelines of the American Academy of

## Keywords

- ▶ otitis media with effusion
- ▶ tympanostomy tube insertion
- ▶ children
- ▶ survey

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Otolaryngology-Head and Neck Surgery (AAO-HNS) on OME, either perioperatively and postoperatively, or regarding the option of placing a ventilation tube. This part of the care also varied depending on the respondents' work location and experience in the medical practice.

## Introduction

Otitis media with effusion (OME) is defined as the presence of fluid inside the middle ear with no associated systemic and local signs of infection (acute otitis media, AOM).<sup>1-5</sup> Extremely common in infants in the first year of life, more than 50% of children develop OME, a rate that increases to more than 60% at 2 years of life.<sup>6</sup>

According to the major international guidelines,<sup>3-5</sup> OME is the most common indication for myringotomy and ear tube placement (MTP), which is believed to be the most common ear, nose, and throat (ENT) surgery performed in children.<sup>3-5</sup> In the United States, it is the most common pediatric outpatient surgery,<sup>7</sup> with 667 thousand procedures performed in children under 15 years in 2006.<sup>8</sup> In 2010, 2.5% of all children over 2 years of age underwent MTP.<sup>9</sup>

There is a plethora of studies in the literature<sup>1-6</sup> on OME addressing children, ethnicities, ages, predisposing factors and accompanying factors, but none focusing on surgeon practices.

The objective of the present study is to determine the practice of Brazilian otorhinolaryngologists when performing MTP according to the years of clinical experience. Secondly, we also want to assess if their practice regarding MTP varied according to the percentage of children treated and the location of their practice.

## Material and Methods

In Brazil, there were 5,399 registered medical doctors specializing in otorhinolaryngology in 2018, according to the Brazilian Federal Council of Medicine (Conselho Federal de Medicina, in Portuguese).<sup>10</sup> Myringotomy and ear tube placement is a common procedure in ENT surgery that is performed by most otolaryngologists. The aim of the present study was to evaluate the practice of otolaryngologists affiliated with the Brazilian Academy of Pediatric Otorhinolaryngology (Academia Brasileira de Otorrinolaringologia Pediátrica, ABOPE, in Portuguese) and/or the Scientific Department of Otorhinolaryngology of the Brazilian Society of Pediatrics (Sociedade Brasileira de Pediatria, SBP, in Portuguese) regarding MTP. This small group (n = 208) was selected because it represents most otolaryngologists who have a greater focus on pediatric patient care in Brazil. It is important to emphasize that in Brazil there is no recognized specialty, subspecialty or qualification in pediatric otolaryngology yet, although there are already nine fellowships training programs in the subspecialty in different states of the country (<https://www.abope.org.br/programa-de-aperfeicoamento-fellowships/>).

An online questionnaire (► **attachment 1 online**) covering questions about the MTP procedure was developed and sent only to otolaryngologists affiliated with the ABOPE and/or the Scientific Department of Otorhinolaryngology of the SBP.

In the present study, the focus is not on the pathology, but on the surgical procedure (MTP) adopted by surgeons. The questions included in the questionnaire were carefully chosen to provide a profile of the Brazilian ENT surgeon regarding the practices followed in MTP in the pre-, peri- and postoperative periods.

In December 2018, an electronic invitation to fill out the online survey was sent. A follow-up reminder on WhatsApp was sent a month later. Two months to fill out the questionnaire were allocated; no incentives were given, and the survey was completely voluntary and anonymous.

The thirty questions were on the practices and procedures followed by the otolaryngologist surgeon exclusively during the surgery to place the ventilation tube. The respondents were evaluated in terms of three aspects: years of clinical experience (since finishing residency); percentage of pediatric patients cared for in their practice; and location of the practice, whether large (in state capitals), in the countryside, or in coastal cities.

All variables were analyzed descriptively. For the qualitative variables, absolute and relative frequencies were calculated. To test the homogeneity among proportions, the Chi-squared test or the Fisher exact test<sup>11,12</sup> were used. The software used for the calculations was the Statistical Package for the Social Sciences (SPSS Statistics for Windows, SPSS Inc., Chicago, IL, United States), version 17.0.

The protocol of the present study was approved by the institutional Ethics in Research Committee under number 4.287.630.

## Results

Responses were obtained from 124 (59.6%) out of 208 physicians. ► **Table 1** shows the distribution the variables related to the procedure, such as antibiotic prescription, water care recommendations, type of ventilation tube used according to the presence or absence of comorbidities and surgical technique used. Most surgeons always place tubes (43.5%), regardless of the presence or not of effusion at the moment of surgery, and do not prescribe antibiotics in the postoperative period (against 27.4% who do). However, most (11.3%) do not prescribe water precautions. The most used tube for patients with and without comorbidities is Pappar-ella, manufacturer: Medtronic (38.7%) and Sheppard, manufacturer: Medicone (67.7%), respectively.

**Table 1** Distribution of frequencies of the variables evaluated in the study

Variable	n	%
Procedure		
ALWAYS places the ventilation tube	54	43.5
NEVER places the ventilation tube	1	0.8
Only places the ventilation tube if secretion comes out of the paracentesis	19	15.3
Only places the ventilation tube if one can aspirate secretion through the paracentesis	33	26.6
Only places the ventilation tube if the tympanic membrane is flaccid	1	0.8
Other	16	12.9
Prescription of antibiotics in the postoperative period		
No	90	72.6
Yes	34	27.4
Guidelines		
Protection with cotton soaked in oil	55	44.4
Silicone plugs	28	22.6
Custom-molded ear protectors made in companies that work with hearing aids	52	41.9
Prohibition against swimming	46	37.1
Prohibition against diving	70	56.5
Prohibition against immersing in sea water	44	35.5
Does not indicate specific protection	14	11.3
Other	3	2.4
Type of ventilation tube for patients without comorbidities		
Sheppard	84	67.7
Paparella	6	4.8
Armstrong	1	0.8
Donaldson	32	25.8
Other	1	0.8
Type of ventilation tube for syndromic patients and those with other comorbidities		
Sheppard	27	21.8
Paparella	48	38.7
Armstrong	4	3.2
Donaldson	17	13.7
T tube	21	16.9
Other	7	5.6
Surgical technique		
Surgical microscope	90	72.6
Endoscope	13	10.5
Both	21	16.9

► **Table 2** describes the physicians' demographics: years of clinical practice, percentage of pediatric patients cared for, and location of their practice. Most respondents (44.4% – 55 professionals) had less than 10 years of experience in the profession. Only 11.3% of doctors (14 professionals) cared exclusively for children, and the vast majority (67.7% – 84 professionals) work in large cities.

► **Table 3** is related to the main null hypothesis (H0). There was no difference in the distribution of variables according to

surgeon's years of experience. Professionals with less than 10 years of experience are the ones who least indicate protection against water (8 doctors), compared to those who have been practicing for more than 30 years. There is also a significant difference between the time the doctors worked and the indication of personalized earplugs ( $p < 0.013$ ). Otolaryngologists with more than 20 years of practice recommend them most often. There was also a significant difference between the years of experience and the indication of custom-molded ear

**Table 2** Absolute and relative frequencies regarding the years of practice, the percentage of pediatric patients and the location of the practice of the study sample

Variable	Classification	n	%
Years of practice	Fewer than 10 years	55	44.4
	10 to 20 years	31	25.0
	20 to 30 years	19	15.3
	More than 30 years	19	15.3
Percentage of pediatric patients	Up to 25%	13	10.5
	25 to 50%	47	37.9
	50 to 75%	50	40.3
	100%	14	11.3
Location of the practice	Large city	84	67.7
	Countryside	29	23.4
	Coastal city	11	8.9

plugs ( $p < 0,013$ ): ENTs who have more than 20 years of practice recommend those more often.

The prescription of antibiotics decreases regarding the percentage of pediatric patients cared for: physicians who have less than 25% of pediatric patients in their practice prescribe systemic antibiotics more often, followed by physicians who have 25% to 50%, 50% to 75%, and 100% of pediatric patients in their practice ( $p = 0.01$ ) (► **Table 4**). Otolaryngologists with less than 10 years of training more often recommend the use of cotton soaked in oil as a precaution against water. Regarding the prescription of antibiotics, there was no statistically significant difference among the physicians with 25% to 50% and 50% to 75% of pediatric patients ( $p = 0.353$ ), but there was a significantly higher percentage of professionals (those who have less than 25% of children in their practice) who prescribe antibiotics (46.2% – 6 doctors) when compared to the group that exclusively cares for children (0%) ( $p < 0.001$ ). Physicians who only care for children tend to discourage swimming and diving postoperatively less often

**Table 3** Absolute and relative frequencies of the questions evaluated according to the years of practice

Variable	Years of practice								p-value
	Fewer than 10 years (n = 55)		10 to 20 years (n = 31)		20 to 30 years (n = 19)		More than 30 years (n = 19)		
	n	%	n	%	n	%	n	%	
<b>Use of ventilation tube</b>									
ALWAYS places a ventilation tube	25	45.5	16	51.6	7	36.8	6	31.6	0.709 <sup>(1)</sup>
Only places the ventilation tube if the tympanic membrane is flaccid	0	0.0	1	3.2	0	0.0	0	0.0	
Only places the ventilation tube if secretion comes out through the myringotomy	9	16.4	3	9.7	3	15.8	4	21.1	
Only places the ventilation tube if one can suction secretion through the myringotomy	16	29.1	6	19.4	6	31.6	5	26.3	
NEVER places a ventilation tube	0	0.0	0	0.0	0	0.0	1	5.3	
Other	5	9.1	5	16.1	3	15.8	3	15.8	
<b>Do you prescribe systemic antibiotics in the postoperative period?</b>									
No	38	69.1	20	64.5	16	84.2	16	84.2	0.273 <sup>(2)</sup>
Yes	17	30.9	11	35.5	3	15.8	3	15.8	
<b>Guidelines</b>									
	30	54.5	10	32.3	5	26.3	10	52.6	0.066 <sup>(2)</sup>

(Continued)

**Table 3** (Continued)

Variable	Years of practice								p-value
	Fewer than 10 years (n = 55)		10 to 20 years (n = 31)		20 to 30 years (n = 19)		More than 30 years (n = 19)		
	n	%	n	%	n	%	n	%	
Protection with cotton soaked in oil									
Silicone ear plugs	10	18.2	3	9.7	5	26.3	10	52.6	0.005 <sup>(1)</sup>
Custom-molded ear plugs	17	30.9	11	35.5	11	57.9	13	68.4	0.013 <sup>(2)</sup>
Does not allow swimming	20	36.4	14	45.2	7	36.8	5	26.3	0.610(2)
Does not allow diving	35	63.6	20	64.5	7	36.8	8	42.1	0.088(2)
Does not allow immersion in sea water	20	36.4	15	48.4	6	31.6	3	15.8	0.132(2)
No water precautions indicated	8	14.5	2	6.5	4	21.1	0	0.0	0.112(1)
Other	2	3.6	0	0.0	1	5.3	0	0.0	0.643(1)
<b>Type of ventilation tube for patients without comorbidities</b>									
Armstrong	0	0.0	1	3.2	0	0.0	0	0.0	0.549 <sup>(1)</sup>
Donaldson	18	32.7	6	19.4	4	21.1	4	21.1	
Other	1	1.8	0	0.0	0	0.0	0	0.0	
Paparella	3	5.5	0	0.0	2	10.5	1	5.3	
Sheppard	33	60.0	24	77.4	13	68.4	14	73.7	
<b>Type of ventilation tube for syndromic patients and those with other comorbidities</b>									
Armstrong	0	0.0	1	3.2	2	10.5	1	5.3	0.229 <sup>(1)</sup>
Donaldson	10	18.2	4	12.9	3	15.8	0	0.0	
Other	4	7.3	2	6.5	0	0.0	1	5.3	
Paparella	20	36.4	8	25.8	9	47.4	11	57.9	
Sheppard	12	21.8	10	32.3	3	15.8	2	10.5	
T tube	9	16.4	6	19.4	2	10.5	4	21.1	
<b>What surgical technique do you use?</b>									
Both	10	18.2	7	22.6	3	15.8	1	5.3	0.110 <sup>(1)</sup>
Endoscope	9	16.4	4	12.9	0	0.0	0	0.0	
Surgical microscope	36	65.5	20	64.5	16	84.2	18	94.7	

Notes: <sup>(1)</sup>Descriptive level of probability of the Fisher exact test. <sup>(2)</sup>Descriptive level of probability of the Chi-squared test.

than physicians who care for both children and adults ( $p = 0.014$  and  $p < 0.001$  respectively) (– **Table 4**).

Finally, there was a significant difference among the groups in terms of location of the practice and the recommendation of postoperative water protection with cotton soaked in oil: physicians who work in the countryside recommend more that type of protection than those who work in large and/or coastal cities ( $p < 0.01$ ). There was also a significant difference in terms of the location of the practice and the type of ventilation tube used in patients without comorbidities: in

the countryside, there was a greater percentage of physicians who use the Sheppard tube, and in large and/or coastal cities, doctors tend to use more the Donaldson tube (Medicone, Porto Alegre, RS, Brazil) (– **Table 5**).

## Discussion

The response rate obtained of almost 60% is quite good, since the rate considered acceptable for this type of survey research is of about 40%.<sup>13</sup>

**Table 4** Absolute and relative frequencies of the questions evaluated according to the percentage of pediatric patients cared for

Variable	Percentage of pediatric patients								p-value
	Up to 25% (n = 13)		25% to 50% (n = 47)		50% to 75% (n = 50)		100% (n = 14)		
	n	%	n	%	n	%	n	%	
<b>Use of ventilation tube</b>									
ALWAYS places the ventilation tube	4	30.8	17	36.2	22	44.0	11	78.6	0.097 <sup>(1)</sup>
Only places the ventilation tube if secretion comes out through the myringotomy	0	0.0	0	0.0	1	2.0	0	0.0	
Only places the ventilation tube if one can suction secretion through the myringotomy	3	23.1	11	23.4	5	10.0	0	0.0	
NEVER places a ventilation tube	6	46.2	13	27.7	13	26.0	1	7.1	
Only places the ventilation tube if secretion comes out through the myringotomy	0	0.0	0	0.0	1	2.0	0	0.0	
Other	0	0.0	6	12.8	8	16.0	2	14.3	
<b>Do you prescribe systemic antibiotics in the postoperative period?</b>									
No	7	53.8	30	63.8	39	78.0	14	100.0	0.010 <sup>(1)</sup>
Yes	6	46.2	17	36.2	11	22.0	0	0.0	
<b>Guidelines</b>									
Protection with cotton soaked in oil	5	38.5	27	57.4	23	46.0	0	0.0	0.002 <sup>(2)</sup>
Silicone ear plugs	4	30.8	13	27.7	9	18.0	2	14.3	0.523 <sup>(1)</sup>
Custom-molded ear plugs	8	61.5	17	36.2	18	36.0	9	64.3	0.098 <sup>(2)</sup>
Does not allow swimming	6	46.2	22	46.8	17	34.0	1	7.1	0.047 <sup>(2)</sup>
Does not allow diving	8	61.5	33	70.2	27	54.0	2	14.3	0.003 <sup>(2)</sup>
Does not allow immersion in sea water	6	46.2	22	46.8	14	28.0	2	14.3	0.063 <sup>(1)</sup>
No water precautions indicated	0	0.0	4	8.5	7	14.0	3	21.4	0.283 <sup>(1)</sup>
Other	0	0.0	1	2.1	2	4.0	0	0.0	1.000 <sup>(1)</sup>
<b>Type of ventilation tube for patients without comorbidities</b>									
Armstrong	0	0.0	0	0.0	0	0.0	1	7.1	0.352 <sup>(1)</sup>
Donaldson	2	15.4	11	23.4	13	26.0	6	42.9	
Other	0	0.0	1	2.1	0	0.0	0	0.0	
Paparella	0	0.0	3	6.4	2	4.0	1	7.1	
Sheppard	11	84.6	32	68.1	35	70.0	6	42.9	
<b>Type of ventilation tube for syndromic patients and those with other comorbidities</b>									
Armstrong	1	7.7	1	2.1	1	2.0	1	7.1	0.544 <sup>(1)</sup>

(Continued)

**Table 4** (Continued)

Variable	Percentage of pediatric patients								p-value
	Up to 25% (n = 13)		25% to 50% (n = 47)		50% to 75% (n = 50)		100% (n = 14)		
	n	%	n	%	n	%	n	%	
Donaldson	2	15.4	7	14.9	6	12.0	2	14.3	0.172 <sup>(1)</sup>
Other	1	7.7	2	4.3	4	8.0	0	0.0	
Paparella	2	15.4	19	40.4	20	40.0	7	50.0	
Sheppard	3	23.1	8	17.0	12	24.0	4	28.6	
T tube	4	30.8	10	21.3	7	14.0	0	0.0	
Both	1	7.7	7	14.9	12	24.0	1	7.1	
Endoscope	1	7.7	9	19.1	3	6.0	0	0.0	
Surgical microscope	11	84.6	31	66.0	35	70.0	13	92.9	

Notes: <sup>(1)</sup>Descriptive level of probability of the Fisher exact test. <sup>(2)</sup>Descriptive level of probability of the Chi-squared test.

The majority (55.6%) of the respondents were otorhinolaryngologists with more than 10 years of experience in the specialty. Only 11.3% (14 doctors) of the sample cared exclusively for pediatric patients, which is compatible with the fact that Brazil does not have a recognized subspecialty in the field of pediatric otolaryngology. This situation may change in the near future because of the increasing number of young otolaryngologists who are finishing their training in the new pediatric otolaryngology fellowship programs held in Brazil.

The results of the present study reinforce the benefits of subspecialization. Younger physicians in the profession, and those who are dedicated exclusively to children, behave more in line with the latest global guidelines on the treatment of OME. That is the case, for example, of the prescription of water precautions. In a systematic review, Moualed et al.<sup>14</sup> concluded against the routine use of water-related precautions based on limited clinical benefits, highlighting the associated cost, the inconvenience of protection, and the anxiety resulting from the guidance and care. In a retrospective cohort, Subtil et al.<sup>15</sup> concluded that recommending water protection has no beneficial effect on the incidence of otorrhea after MTP. They emphasize that such preventive measures do not seem to have an impact on quality of life. One year after, the same group published a randomized, well-designed clinical trial<sup>16</sup> showing that the incidence of otorrhea did not differ between groups with or without hearing protection during exposure to water, which corroborates current guidelines that state that routine water precautions are unnecessary in this population. In the present study, we observed that some type of water protection is recommended by 88.3% (110 individuals) of physicians, but physicians who have most recently completed residency the shorter the time after graduating from residency, the less common is the recommendation of water precautions the least. In the present study, we observed that some type of precaution against water is recommended by 88.7% (110 individuals) of physicians; the fewer years in the profession, the less common is the water protection recom-

mendation. Perhaps younger physicians are more up-to-date on current guidelines.

There is no recommendation to clean the external auditory canal before the MTP (since this practice does not change the incidence of otorrhea or postoperative complications),<sup>17,18</sup> but 47 respondents (37.9%) prepare before the procedure. It was also interesting to see that most respondents who prep use aqueous chlorhexidine as an antiseptic. It is important to highlight that there are studies<sup>19</sup> showing the possible ototoxicity of certain antiseptic solutions, such as chlorhexidine and iodine.

Although most respondents (72.6% – 90 doctors) still use the surgical microscope, some use of the endoscope in isolation or associated with the microscope. The endoscope has been used more frequently in several otological surgeries, from MTP to more complex procedures, such as resection of vestibular schwannomas.<sup>20</sup> The endoscope can provide better visualization of the tympanic membrane in patients with a narrow ear canal, and may have better image quality when compared to older microscopes. However, it requires a learning curve. What we have observed in our medical residency services in otorhinolaryngology is the increasingly frequent use of endoscopes in ear surgeries by younger physicians.

The tympanic membrane quadrants used for paracentesis are well defined. In the poll conducted by Todd<sup>21</sup> in 1999, the sites most chosen for paracentesis were the anteroinferior and posteroinferior quadrants of the tympanic membrane. These locations were also chosen by most respondents in the present study (97.6% – 121 doctors).

For the surgical treatment of OME, the guidelines of the American Academy of Otorhinolaryngology-Head and Neck Surgery (AAO-HNS)<sup>3</sup> and the international consensus (ICON) on the management of OME in children<sup>22</sup> recommend MTP as the main surgical procedure. Ventilation tube placement is a preoperative indication; does not depend on a specific intraoperative finding. It is debatable, since no guideline in the literature states that the placement of the ventilation tube depends on an intraoperative surgical finding, such as

**Table 5** Absolute and relative frequencies of the questions evaluated according to the location where the physician works

	Location of the practice						p-value
	Large city (n = 84)		Countryside (n = 29)		Coastal city (n = 11)		
	n	%	n	%	n	%	
<b>Use of ventilation tube</b>							
ALWAYS places the ventilation tube	35	41.7	16	55.2	3	27.3	0.463 <sup>(2)</sup>
Only places the ventilation tube if the tympanic membrane is flaccid	0	0.0	1	3.4	0	0.0	
Only places the ventilation tube if secretion comes out by the paracentesis	12	14.3	5	17.2	2	18.2	
Only places the ventilation tube if one can suction secretion through the paracentesis	25	29.8	4	13.8	4	36.4	
NEVER places the ventilation tube	1	1.2	0	0.0	0	0.0	
Other	11	13.1	3	10.3	2	18.2	
<b>Do you prescribe systemic antibiotics in the postoperative period?</b>							
No	61	72.6	20	69.0	9	81.8	0.811 <sup>(2)</sup>
Yes	23	27.4	9	31.0	2	18.2	
<b>Guidelines</b>							
Protection with cotton soaked in oil	31	36.9	21	72.4	3	27.3	0.002 <sup>(1)</sup>
Silicone ear plugs	17	20.2	10	34.5	1	9.1	0.153 <sup>(1)</sup>
Custom-molded ear plugs	39	46.4	9	31.0	4	36.4	0.324 <sup>(1)</sup>
Does not allow swimming	31	36.9	11	37.9	4	36.4	0.994 <sup>(1)</sup>
Does not allow diving	45	53.6	18	62.1	7	63.6	0.642 <sup>(1)</sup>
Does not allow immersion in sea water	30	35.7	10	34.5	4	36.4	0.991 <sup>(1)</sup>
No water precautions indicated	9	10.7	3	10.3	2	18.2	0.733 <sup>(2)</sup>
Other	1	1.2	1	3.4	1	9.1	0.133 <sup>(2)</sup>
<b>Type of ventilation tube for patients without comorbidities</b>							
Armstrong	1	1.2	0	0.0	0	0.0	0.039 <sup>(2)</sup>
Donaldson	27	32.1	2	6.9	3	27.3	
Other	1	1.2	0	0.0	0	0.0	
Paparella	5	6.0	0	0.0	1	9.1	
Sheppard	50	59.5	27	93.1	7	63.6	
<b>Type of ventilation tube for syndromic patients and those with other comorbidities</b>							
Armstrong	4	4.8	0	0.0	0	0.0	0.058 <sup>(2)</sup>
Donaldson	14	16.7	1	3.4	2	18.2	
Other	3	3.6	1	3.4	3	27.3	
Paparella	31	36.9	13	44.8	4	36.4	

(Continued)



**Table 5** (Continued)

	Location of the practice						p-value
	Large city (n = 84)		Countryside (n = 29)		Coastal city (n = 11)		
	n	%	n	%	n	%	
Sheppard	17	20.2	10	34.5	0	0.0	
T tube	15	17.9	4	13.8	2	18.2	
<b>What surgical technique do you use?</b>							
Both	13	15.5	7	24.1	1	9.1	0.451 <sup>(2)</sup>
Endoscope	10	11.9	1	3.4	2	18.2	
Surgical microscope	61	72.6	21	72.4	8	72.7	

Notes: <sup>(1)</sup>Descriptive level of probability of the Fisher exact test. <sup>(2)</sup>Descriptive level of probability of the Chi-squared test.

the presence of effusion (glue ear). In the present study, less than half of the otolaryngologists (43.5% – 54 doctors) always place the ventilation tube after the child has already been anesthetized. It seems that, for this sample of Brazilian otolaryngologists, placing the ventilation tube is not a pre-operative indication, but a factor that depends on an intra-operative finding (the presence of effusion). The major inconsistency is to indicate an MTP surgery, submit the patient to general anesthesia, and not place the ventilation tube in a surgery whose only objective is to improve the dysfunction in the Eustachian tube by placing a pressure-equalizing tube.

In the present study, there was no controversy about the types of ventilation tubes used. In the case of children without comorbidities, the most used ventilation tube is the Sheppard, followed by the Donaldson tube. For children with comorbidities such as syndromes and cleft palate, the Paparella and Tube T are the most used. In the study conducted by Todd<sup>21</sup> in 1999, Teflon and Silastic were the most frequently-used materials. In the study by Rosenfeld et al.<sup>23</sup> (2013), the short-term tube most used in Europe, China and South Africa was the Shepard (made of fluoroplastic or titanium, similar to the type-1 Paparella ear tube).

Another issue addressed is the efficacy of middle-ear irrigations, either during MTP or in the immediate postoperative period, in reducing infections. In a study, Gross et al.<sup>24</sup> (2000) concluded that using irrigation with pure saline in the middle ear in the intraoperative period may be more effective than antibiotic drops to prevent otorrhea in the postoperative period. In a systematic review evaluating the occurrence of otorrhea at least two weeks after MTP, Venekamp et al.<sup>25</sup> (2016) found moderate to low-grade evidence that antibiotic ear drops (with or without corticosteroids) are more effective when compared with oral antibiotics, corticosteroid ear drops, or without any treatment. The authors<sup>25</sup> have also reported that there is limited, inconclusive evidence that antibiotic ear drops are more effective than local washing with saline, and there is no confirmation that antibiotic ear drops with corticosteroids are more effective than those without corticosteroids.

## Conclusion

The present study revealed that many otolaryngologists do not follow some of the recommendations of the current AAO-HNS guidelines on OME, either perioperatively and postoperatively, or regarding the placement of a ventilation tube. This part of the care also varied depending on the respondents' work location and experience in the medical practice.

### Note

All authors have actively participated in the writing of the present article, and they have all contributed equally to it.

The present study was chosen for oral presentation at the 2020 Annual Meeting of the Society for Ear, Nose, and Advancement of Throat in Children (SENTAC).

### Conflict of Interests

The authors have no conflict of interests to declare.

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