

Figure S1 Funnel plot for the estimated complication rate with BDET. The I^2 value (31.2%) and test for heterogeneity suggested moderate significant heterogeneity among the studies ($Q=15.59$; $df=8$; $P=0.05$). BDET, balloon dilation of the eustachian tube; df , degree of freedom.

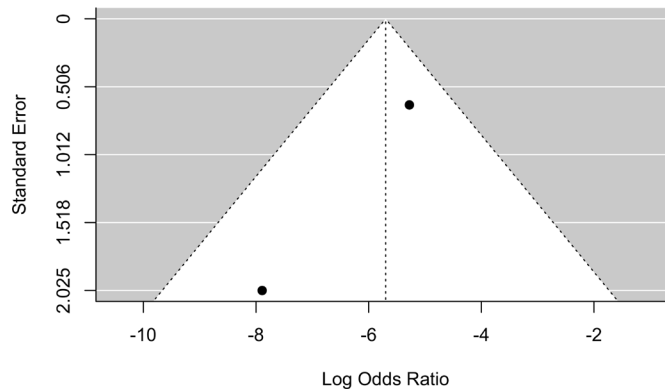


Figure S2 Funnel plot for the estimated odds ratio for the prevalence of OM before and after BDET. The I^2 value (0.1%) and test for heterogeneity suggested low non-significant heterogeneity among the studies ($Q=3.52$; $df=1$; $P=0.06$). OM, otitis media; BDET, balloon dilation of the eustachian tube; df , degree of freedom.

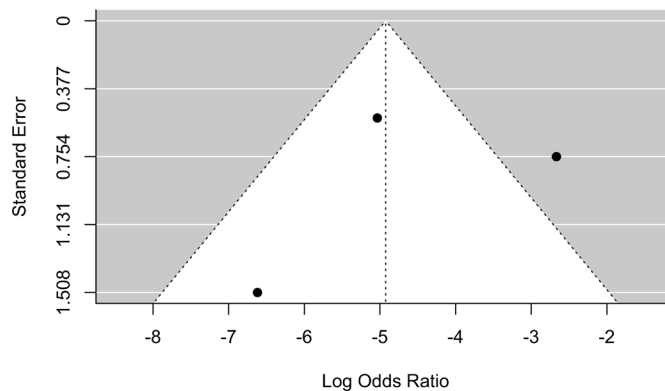


Figure S3 Funnel plot for the estimated odds ratio for the prevalence of retraction before and after BDET. The I^2 value (80.9%) and test for heterogeneity suggested high significant heterogeneity among the studies ($Q=11.76$; $df=2$; $P<0.01$). BDET, balloon dilation of the eustachian tube; df , degree of freedom.

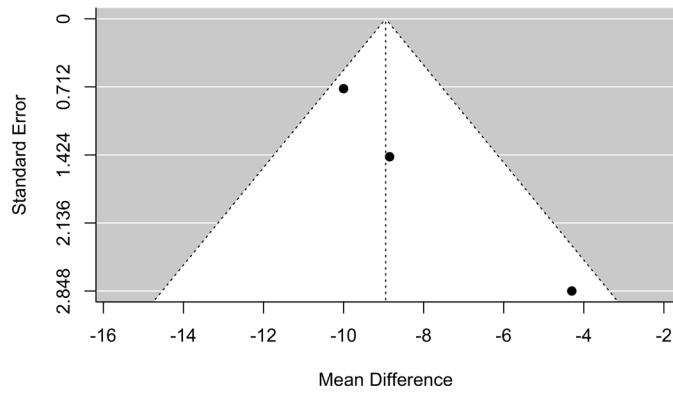


Figure S4 Funnel plot for the estimated mean difference in AC before and after BDET. The I^2 value (42.3%) and test for heterogeneity suggested moderate non-significant heterogeneity among the studies ($Q=4.00$; $df=2$; $P=0.14$). AC, air conduction; BDET, balloon dilation of the eustachian tube; df , degree of freedom.

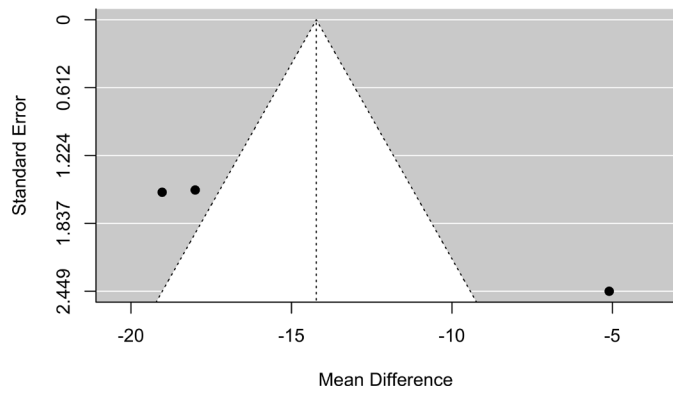


Figure S5 Funnel plot for the estimated mean difference in ABG before and after BDET. The I^2 value (94.4%) and test for heterogeneity suggested high significant heterogeneity among the studies ($Q=25.22$; $df=2$; $P<0.01$). ABG, air-bone gap; BDET, balloon dilation of the eustachian tube; df , degree of freedom.

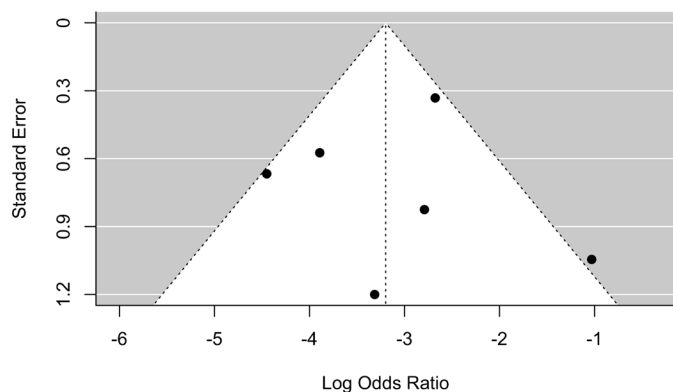


Figure S6 Funnel plot for the estimated average odds ratio for the prevalence of an abnormal VM before and after BDET. The I^2 value (45.4%) and test for heterogeneity suggested moderate significant heterogeneity among the studies ($Q=12.17$; $df=5$; $P=0.03$). VM, Valsalva manoeuvre; BDET, balloon dilation of the eustachian tube; df , degree of freedom.

Table S1 Search strategy

| Database | Search strategy | Number of results |
|----------|---|-------------------|
| CINAHL | 1. TI (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal) OR AB (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal) 2. MH "dilatation" OR TI dilat* OR AB dilat* 3. MH "eustachian tube" OR TI ("auditory tube" OR "eustachian tube" OR "pharyngotympanic tube") OR AB ("auditory tube" OR "eustachian tube" OR "pharyngotympanic tube") 4. MH "child" OR MH "preschool child" OR MH "adolescent" OR MH "pediatric" OR TX (child* OR paediatric* OR pediatric* OR "school age*") | 30 |
| Cochrane | 1. (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal):ti,ab,kw 2. MeSH descriptor: [Dilatation] explode all trees 3. (dilat*):ti,ab,kw 4. #2 OR #3 5. MeSH descriptor: [Eustachian Tube] explode all trees 6. (auditory tube* OR eustachian tube* OR pharyngotympanic tube*):ti,ab,kw 7. #5 OR #6 8. MeSH descriptor: [Child] explode all trees 9. MeSH descriptor: [Child, Preschool] explode all trees 10. MeSH descriptor: [Adolescent] explode all trees 11. MeSH descriptor: [Pediatrics] explode all trees 12. (child* OR pediatric* OR paediatric* OR school age*) 13. #8 OR #9 OR #10 OR #11 OR #12 14. #1 AND #4 AND #7 AND #13 | 12 |
| Embase | 1. balloon:ab,ti OR balloons:ab,ti OR tuboplasty:ab,ti OR tuboplasties:ab,ti OR endonasal:ab,ti 2. 'dilatation'/exp OR dilat*:ab,ti 3. 'eustachian tube'/exp OR 'auditory tube':ab,ti OR 'eustachian tube':ab,ti OR 'pharyngotympanic tube':ab,ti 4. 'child'/exp OR 'preschool child'/exp OR 'adolescent'/exp OR 'pediatric'/exp OR child* OR paediatric* OR pediatric* OR 'school age*' | 68 |
| MEDLINE | 1. TI (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal) OR AB (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal) 2. MH "dilatation" OR TI dilat* OR AB dilat* 3. MH "eustachian tube" OR TI ("auditory tube" OR "eustachian tube" OR "pharyngotympanic tube") OR AB ("auditory tube" OR "eustachian tube" OR "pharyngotympanic tube") 4. MH "child" OR MH "preschool child" OR MH "adolescent" OR MH "pediatric" OR TX (child* OR paediatric* OR pediatric* OR "school age*") | 63 |
| PubMed | 1. Balloon[tiab] OR balloons[tiab] OR tuboplasty[tiab] OR tuboplasties[tiab] OR endonasal[tiab] 2. Dilatation[MeSH] OR dilat*[tiab] 3. Eustachian tube[MeSH] OR auditory tube*[tiab] OR eustachian tube*[tiab] OR pharyngotympanic tube*[tiab] 4. Child[MeSH] OR child, preschool[MeSH] OR adolescent[MeSH] OR pediatric[MeSH] OR child*[text] OR pediatric*[text] OR paediatric*[text] OR school age*[text] | 47 |
| Scopus | 1. TITLE-ABS-KEY (balloon OR balloons OR tuboplasty OR tuboplasties OR endonasal) 2. INDEXTERMS (dilatation) OR TITLE-ABS-KEY (dilat*) 3. INDEXTERMS ("eustachian tube") OR TITLE-ABS-KEY ("auditory tube" OR "eustachian tube" OR "pharyngotympanic tube") 4. INDEXTERMS ("child") OR INDEXTERMS ("preschool child") OR INDEXTERMS ("adolescent") OR INDEXTERMS ("pediatric") OR (child* OR paediatric* OR pediatric* OR "school age*") | 133 |