

Balloon dilation  
of  
the Eustachian tube

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OUH

# Treatment (historic) of Chronic obstructive tuba dysfunction

Bougie  
dilation

Steroid (and/or  
antihistamines)  
nasal spray

Myringotomy/  
grommet

Alteration of  
the *peritubal*  
muscles

**Balloon dilation**

Drilling of the  
bony ET

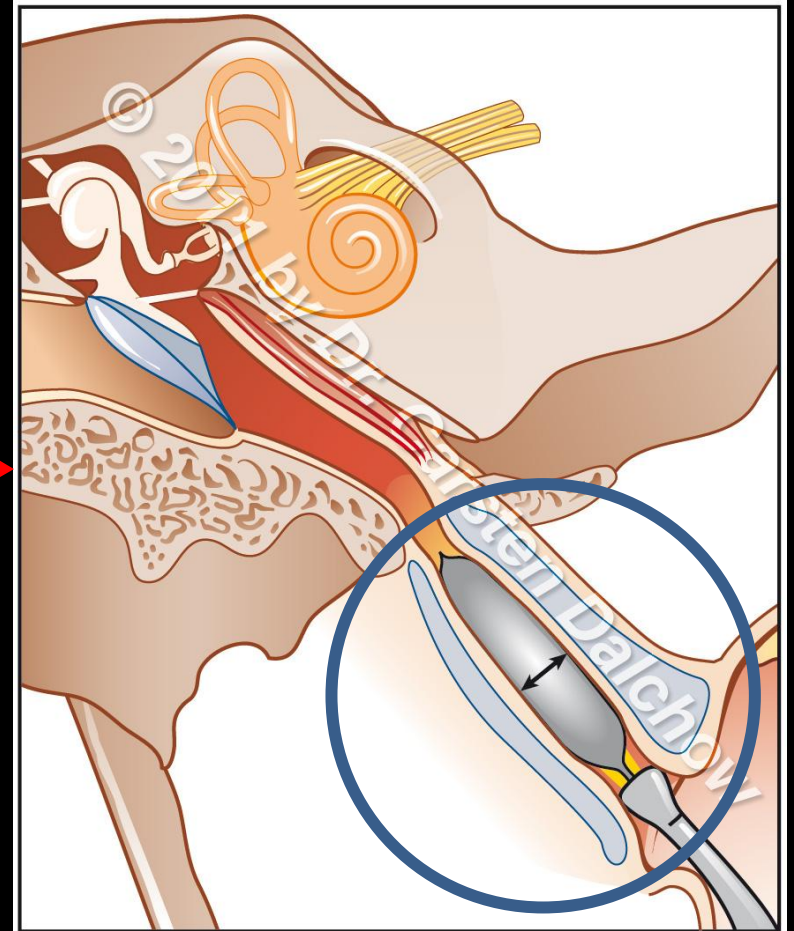
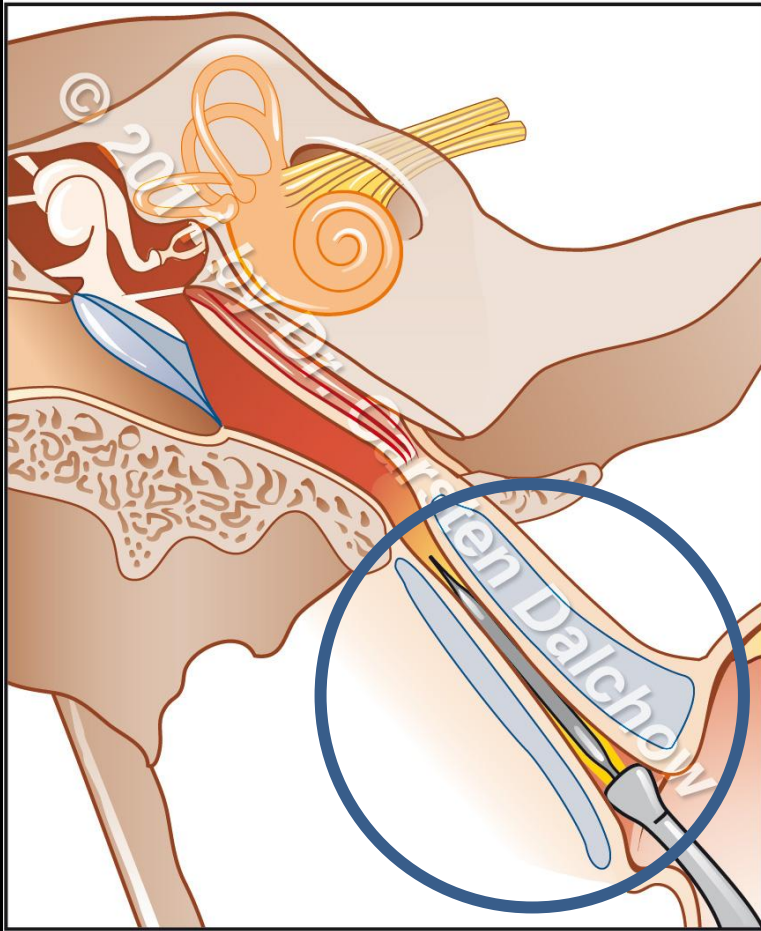
Catheterization  
of ET

Noninvasive  
autoinflation

Laser/  
microdebrider  
tuboplasty

# Bielefeld Balloon Catheter

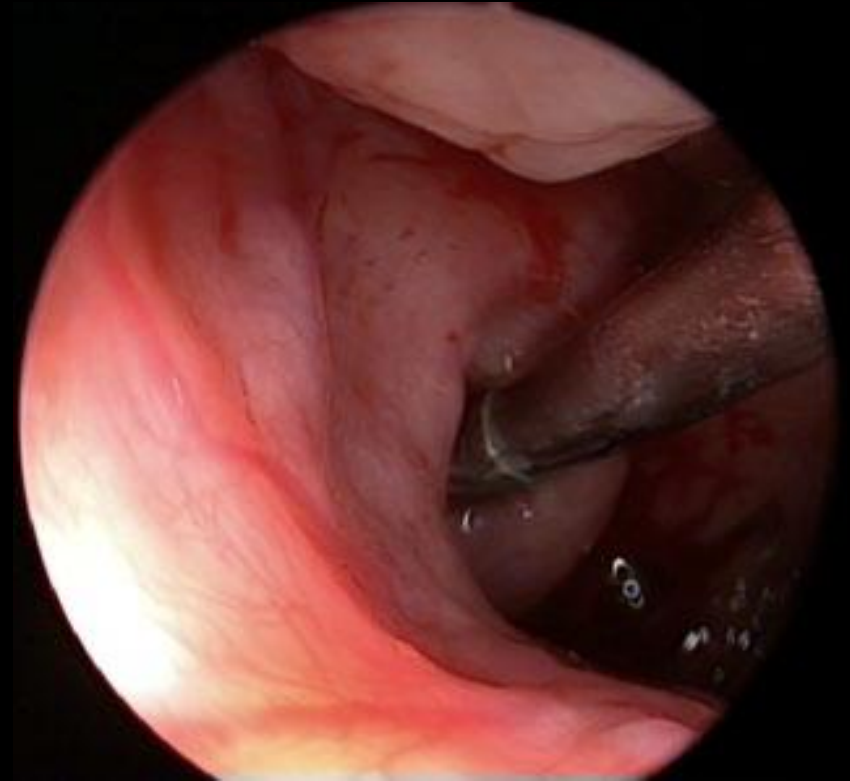






Jens H. Wanscher

- Endonasal approach
- The balloon is applied to ET guided by a rigid scope
- Dilation for 2 minutes (10 bar)
- General anesthesia



2012, HNO,  
*Chronisch obstruktive Tubenfunktionsstörung des Erwachsenen,*  
Schröder et al. (Tyskland)

120 patients (209 ET)  
*Bielefeld Balloon Catheter*  
2009-2011

Classical anamnesis  
+  
Poor tubafunction  
(Tubomanometry (score <5),  
Tympanometry, Valsalva maneuver)



Combination of questions  
and measurements  
(Score 0-10)  
*Bielefelder tubenscore*

2012, HNO,  
*Chronisch obstruktive Tubenfunktionsstörung des Erwachsenen,*  
Schröder et al. (Tyskland)

120 patients (209 ET)  
*Bielefeld Balloon Catheter*  
2009-2011

3 days postoperative:  
20 % had sign. positive  
impact on subjectiv  
tubafunction

No complications



?

2 months postoperative:  
80 % had sign. positive  
impact on tubafunction  
(subj. + obj.)  
(66 patients, 115 ET)

81 % normal valsalva  
(subjective)



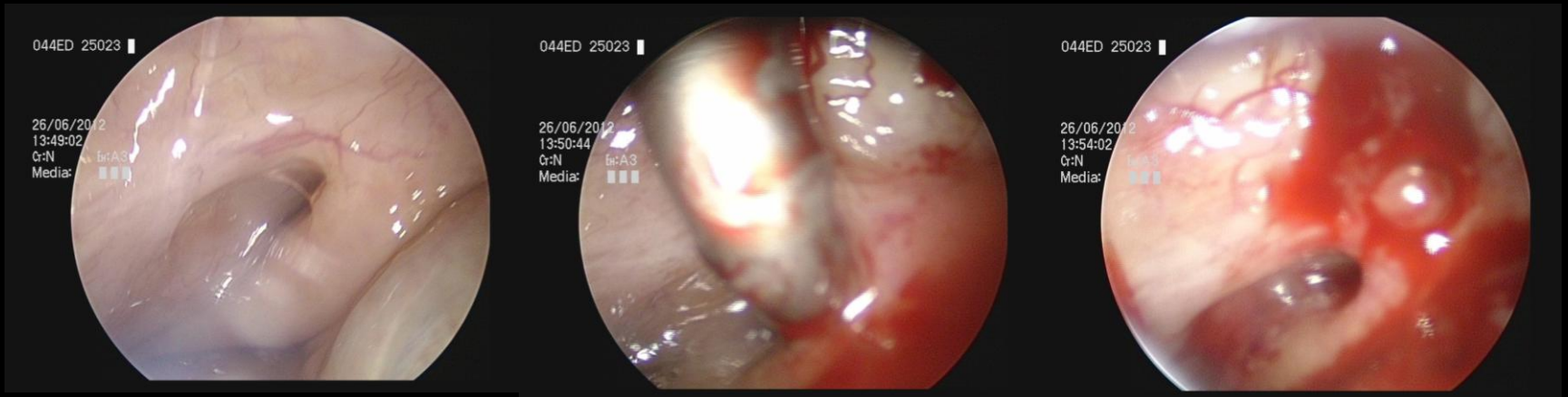
?

12 months postoperative:  
80 % had sign. positive  
impact on tubafunction  
(subj. + obj.)  
(12 patients, 20 ET)

90 % normal valsalva  
(subjectivt)



# OUH experiences



# Pre-operative examinations

- Anamnesis
- Valsalva/extended valsalva/otomicroscopy
- Tympanometry
- Toynbees test
- Nine-step inflation/deflation test
- Tubomanometer
- Endoscopy, Radiology, Audiometry
- Other...

# 5 patients – 7 ET

- **P1** = 21 y , chronic secr. otitis media sin, myringotomy sin x12
- **P2** = 54 y , chronic obstr. tubadysfunction sin/(dxt) in many years, myringotomy many times
- **P3** = 31 y , myringoplasty x2 dxt, myringotomy dxt many times
- **P4** = 26 y , myringoplasty dxt x2, myringoplasty sin x1, slight retraction bilat, adenotomy x2
- **P5** = 20 y , cholesteatoma surgery sin x1, myringotomy sin x5, atelecasis sin

## CT og rhinoskopi:

Normal except P4(a polyp by the right ET ostium)

## Toynbees test/valsalva:

Negative/no function

## Audiometry:

P1: minor ABG sin

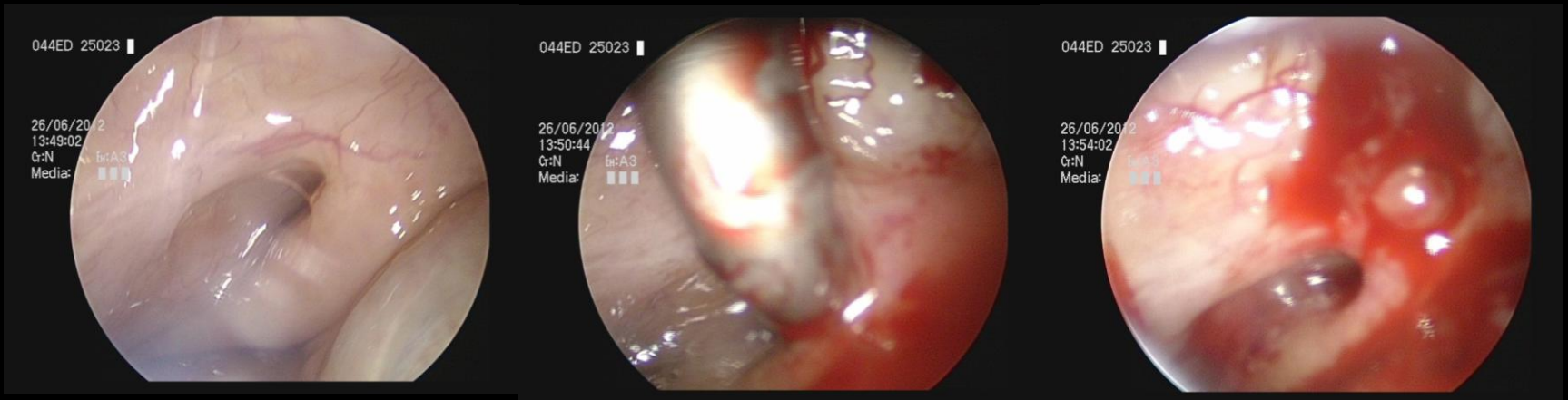
P2: normal

P3: minor ABG bilat

P4: minor ABG bilat

P5: large ABG sin

# 5 patients – 7 ET



# Surgery

**No complications**

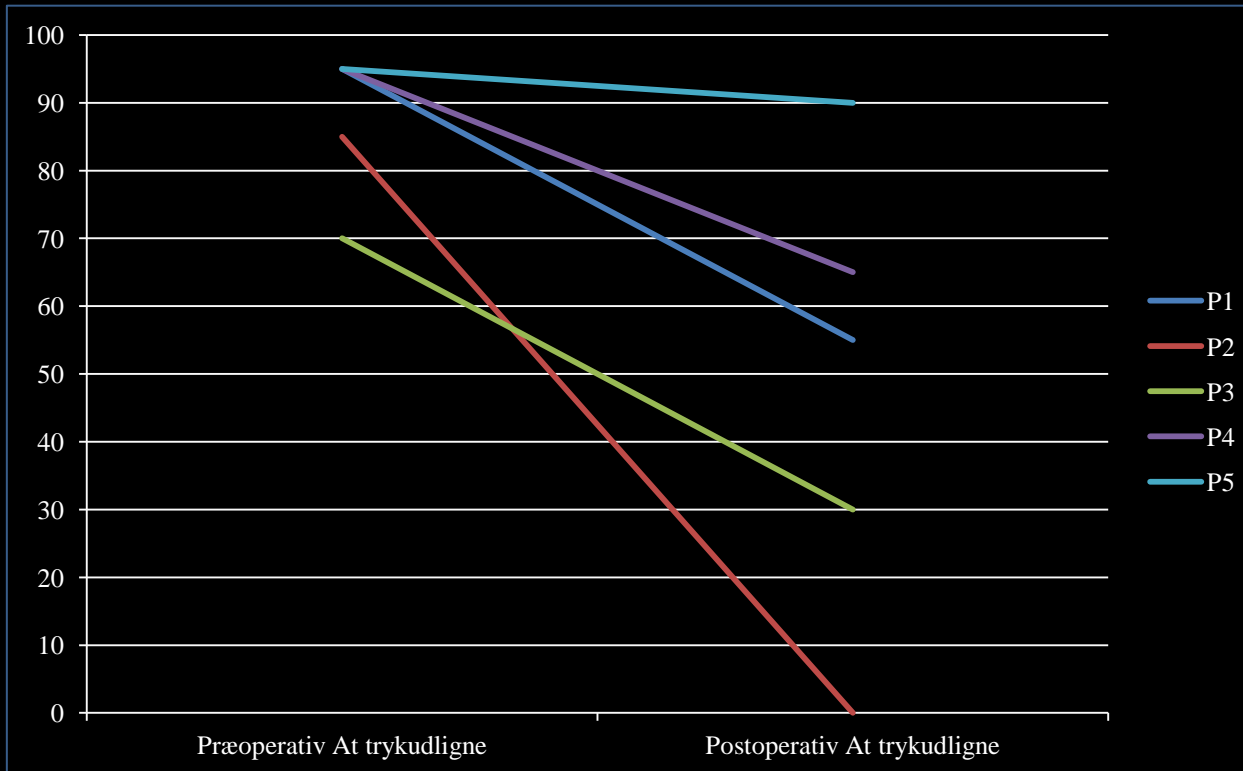
(except a bit of nosebleed and a case of acute otitis media  
2 weeks post-operative)

**Technically easy surgery**

# Questionnaire/VAS

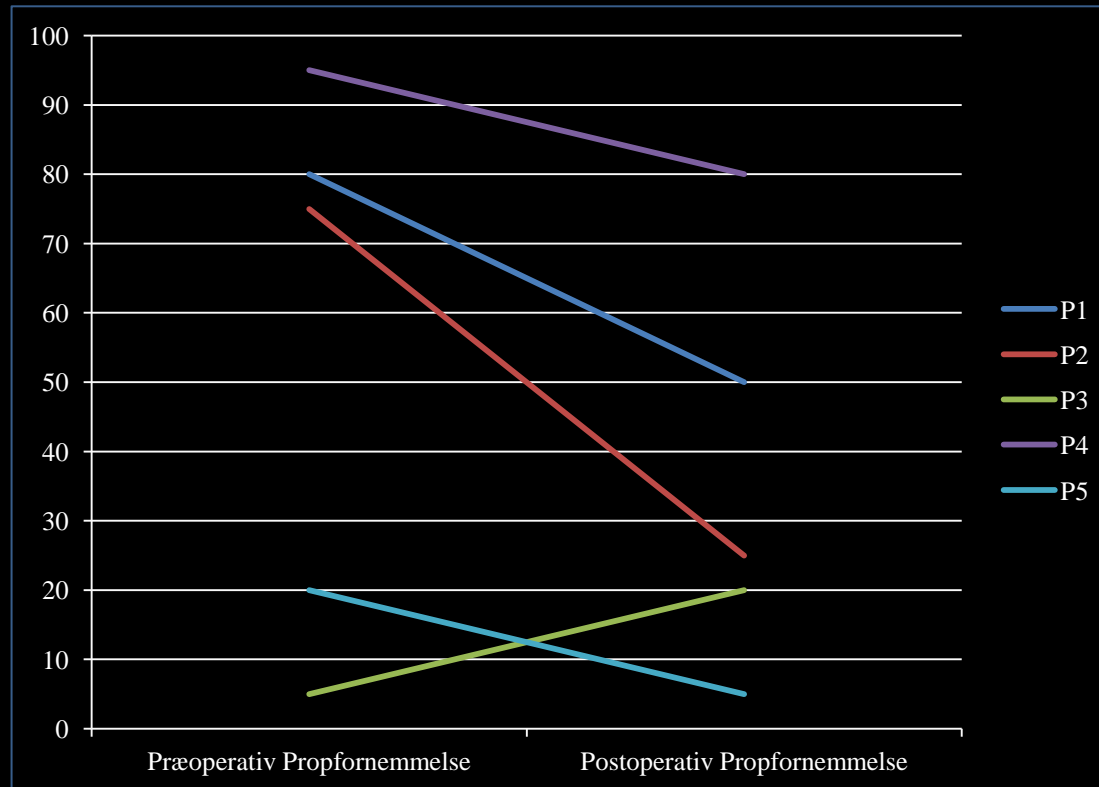
# Questionnaire/VAS

Hvor svært har du ved at trykudligne ørerne  
(når du holder dig for næsen) ?



# Questionnaire/VAS

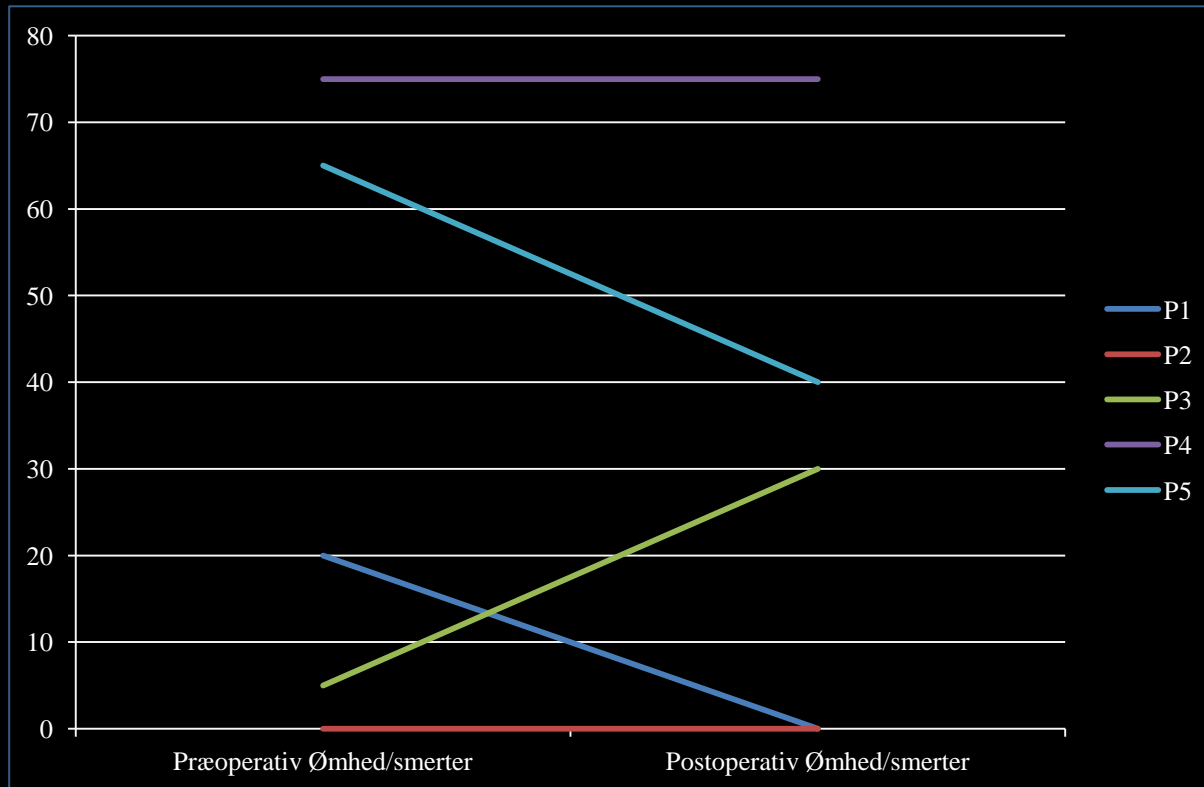
Hvor tit føler du propfornemmelse i ørerne ?





# Questionnaire/VAS

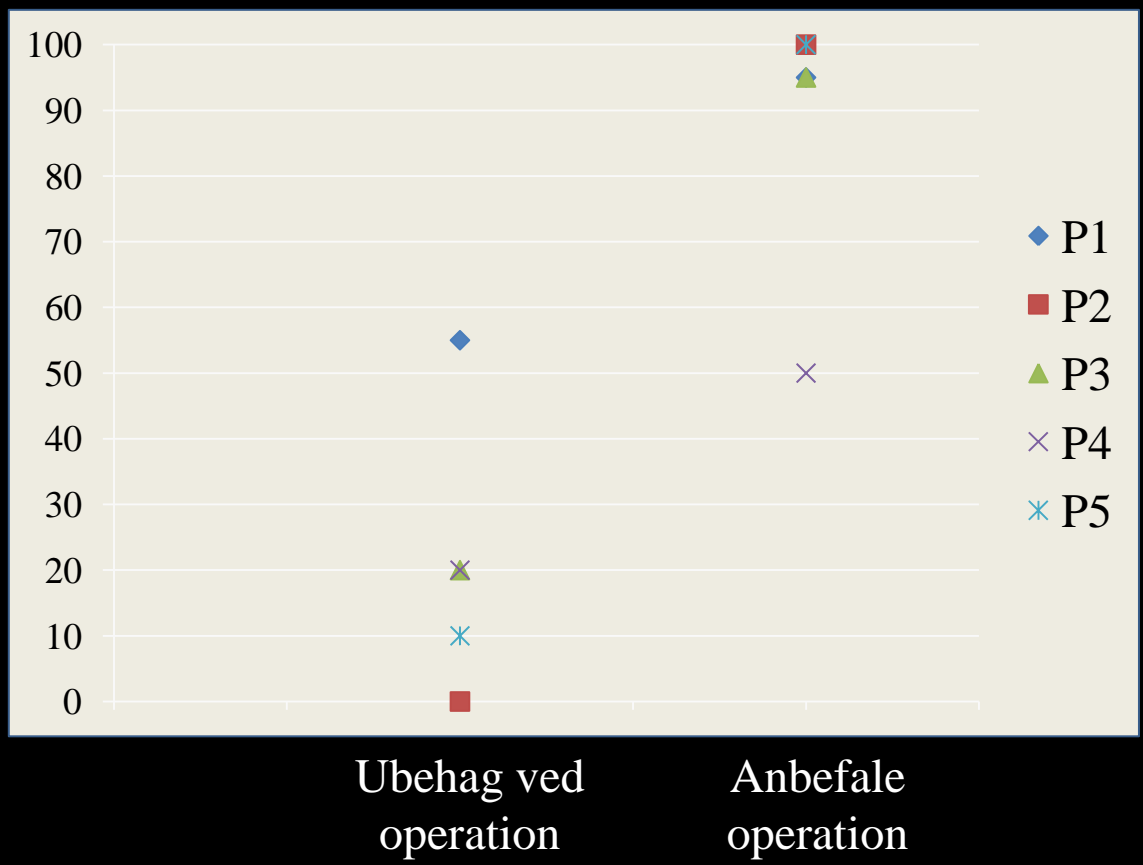
Hvor ofte har du ømhed/smerter i ørerne ?



# Questionnaire/VAS

Hvor stort ubehag havde du ved operationen ?

Vil du anbefale operationen til en ven/bekendt med tilsvarende problemer ?



# Postoperative findings

## Toynbees test/valsalva

All with a positive test  
except P4 (dxt)  
(polyp + remnants after adenotomy)

## Audiometry

No change

# Conclusion

## BIG SUCCES BY VAS

**P2** = 54 y , chronic obstr. tubadysfunction sin/(dxt) in many years, myringotomy many times

## SOME SUCCES BY VAS

**P1** = 21 y , chronic secr. otitis media sin, myringotomy sin x12

**P4** = 26 y , myringoplasty dxt x2, myringoplasty sin x1, slight retraction bilat, adenotomy x2

**P5** = 20 y , cholesteatoma surgery sin x1, myringotomy sin x5, atelecasis sin

## NO SUCCES BY VAS

**P3** = 31 y , myringoplasty x2 dxt, myringotomy dxt many times

# Conclusion

BIG SUCCES BY TOYNBEES TEST/VALSALVA

ALL

Except P4

No change in hearing/audiometry

# Questions

By 20 % of the patients, it doesn't work – **why?**

**How long lasting** is the effect of the dilation?

Is preoperative **CT** necessary?

Can it be done in **local** anesthesia?

How about **children?**

# Future perspectives

OUH continues dilation of ET

Further results will be presented at  
DSOHH 2013

More research is wanted 😊

Thank you





# Kort om **lasertuboplastik**

1997, Kujawski et al:

68 % med normal tympanometri efter 1 år

65 % med normal tympanometri efter 3 år

2003, Poe et al:

36 % med normal tympanometri efter 6 måneder

38 % med normal tympanometri efter 2 år

(ud af kun 13 patienter blev bl.a. set synekier og granulomer i det Eustachiske rør!)

