

Cartilage palisades vs fascia grafting in tympanoplasty after cholesteatoma surgery - 10-year results

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STUDY AIM

- * To compare long-term results of cartilage palisades with fascia grafting in tympanoplasty after pediatric cholesteatoma surgery
 - * **Outcome measures:**
 - cholesteatoma recurrence
 - drum retraction
 - perforation
 - hearing acuity

BACKGROUND

- * The palisade cartilage tympanoplasty was introduced by the Heermanns in 1962 and has since been refined.
- * Slender, elongated pieces (palisades) are cut from tragal or conchal cartilage, preserving perichondrium on one side. They are placed parallel to the malleus handle, followed by replacement of the tympanomeatal flap, whereby they provide supporting stiffness to the drum.

MATERIAL & METHODS

- * 65 children operated for sinus- or tensa retraction cholesteatoma 1995-2000 (mean age 9)
- * 32 had drum reconstruction using palisade cartilages
- * 33 had drum reconstruction using fascia grafting

MATERIAL & METHODS

- * Patient chart review**

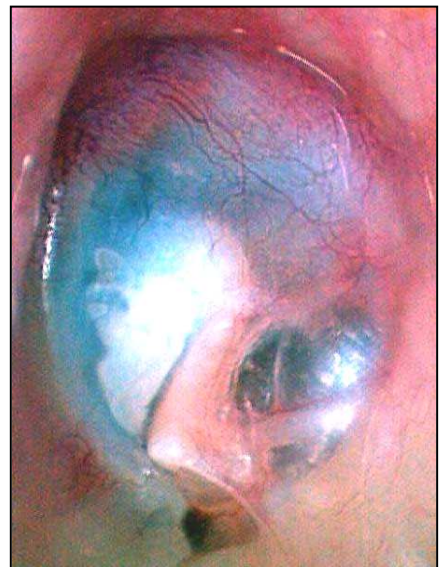
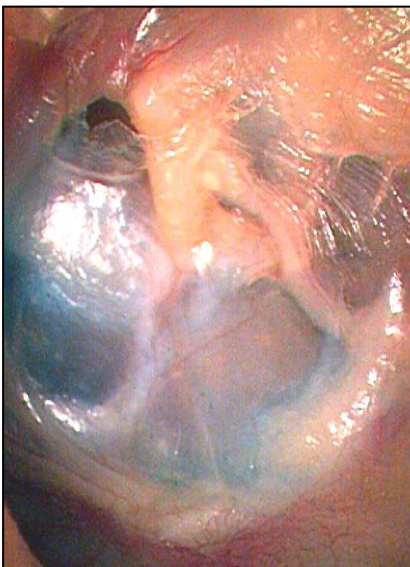
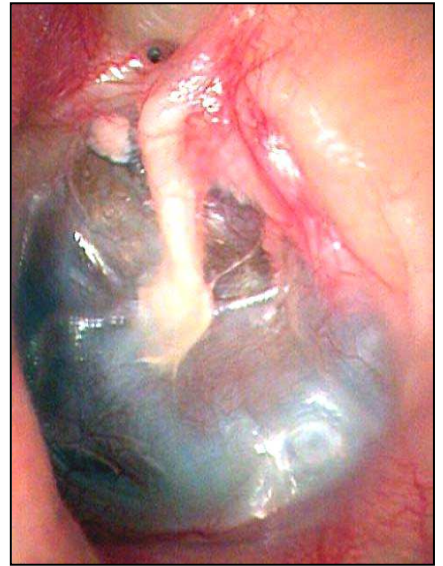
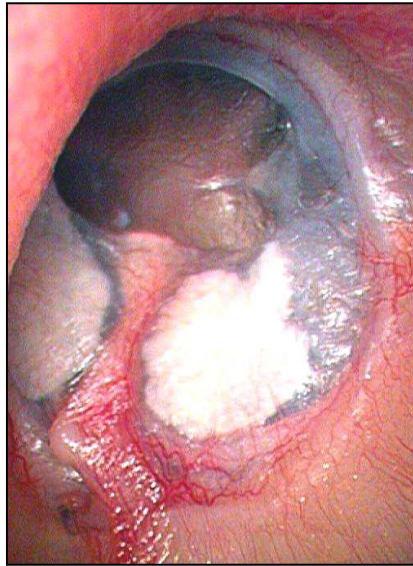
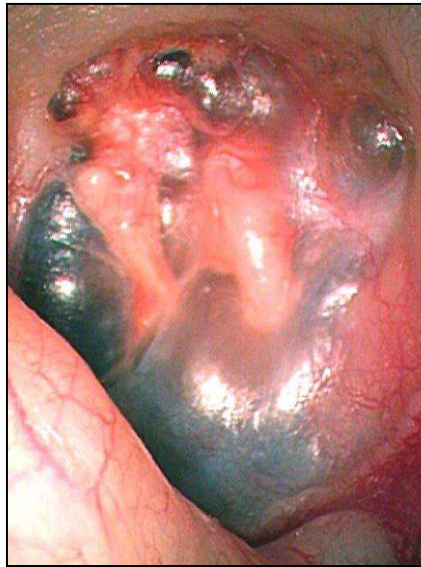
- * 4- and 10-year follow-up examination:**
 - History
 - Otomicroscopy
 - Audiometry
 - (ET function tests)

RESULTS

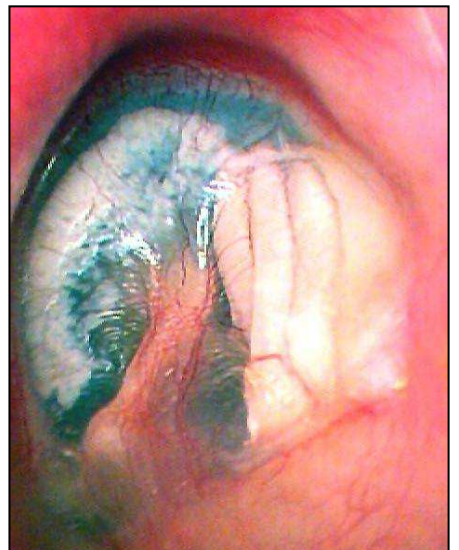
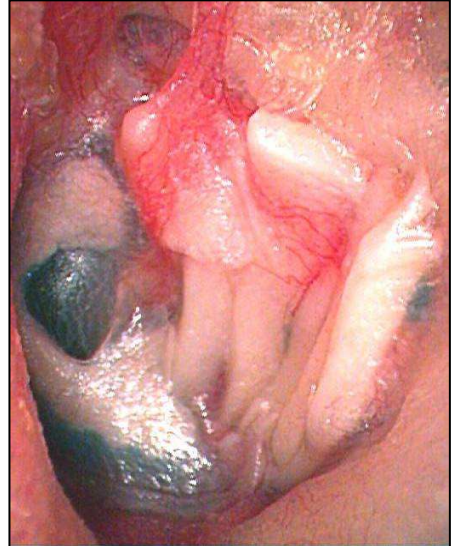
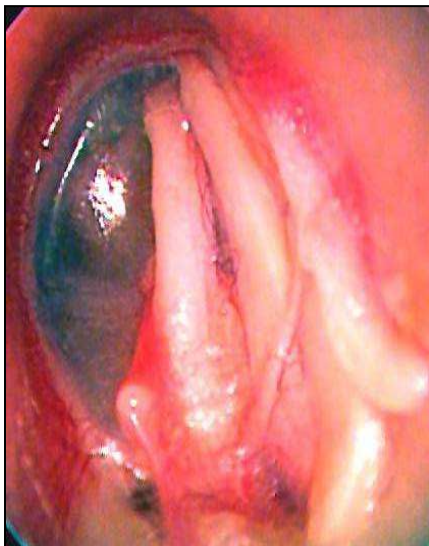
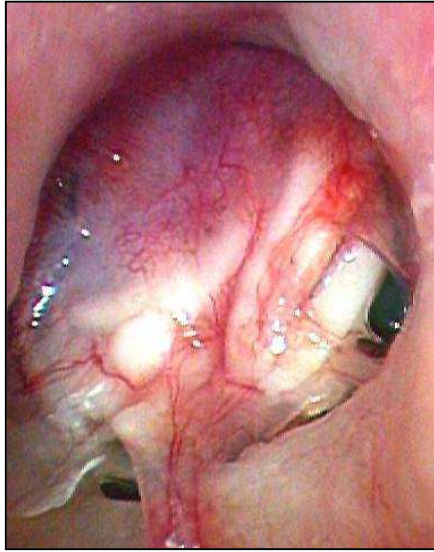
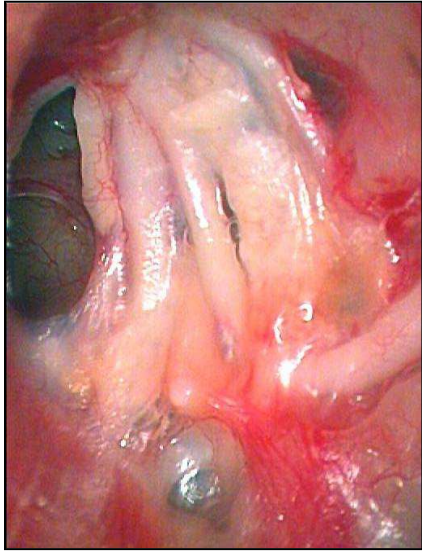
Follow-up examination

- * All but two patients in both groups attended the 10-year follow-up examination (94% follow-up)

- * Mean overall follow-up period was 119 months
 - palisade group 115 months
 - fascia group 125 months



Fascia drums 10 years post-op



Palisade drums 10 years post-op

RESULTS

Accumulated pathology
during follow-up and at the 10-year examination

	Fascia	Palisades	P-value
Cholesteatoma	2 (recurrent)	2 (residual)	-
Retraction	14 (42%)	6 (19%)	0.03
Perforation	7 (21%)	4 (13%)	-

RESULTS

Hearing acuity

- PTA (pure tone average)
- SRT (speech reception threshold)
- ABG (air-bone gap)

Mean PTA

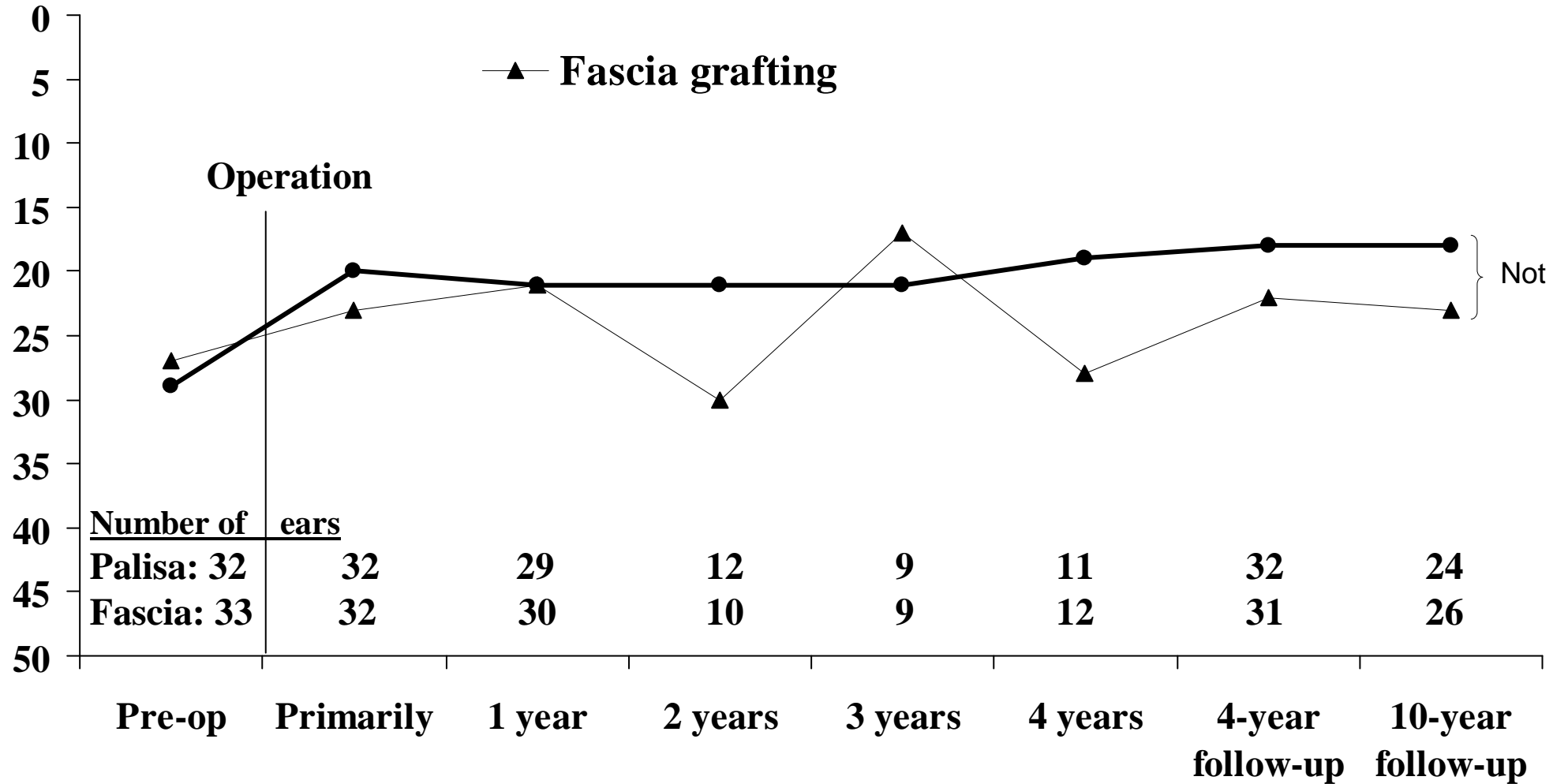
dB HL

● Cartilage palisade grafting

▲ Fascia grafting

Operation

} Not sign.



Number of ears

Palisa: 32

32

29

12

9

11

32

24

Fascia: 33

32

30

10

9

12

31

26

Pre-op

Primarily

1 year

2 years

3 years

4 years

4-year
follow-up

10-year
follow-up

Mean SRT

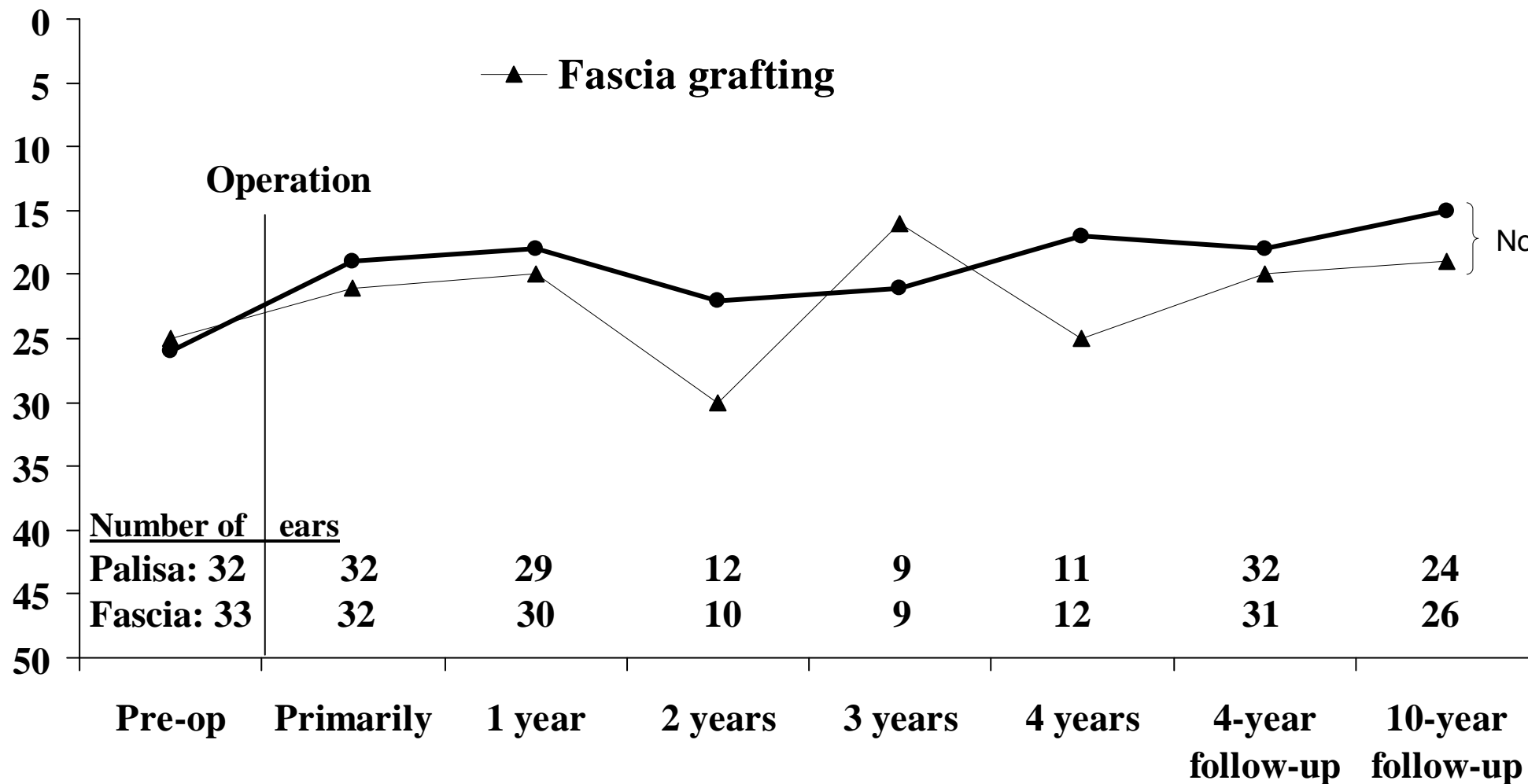
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Pre-op

Primarily

1 year

2 years

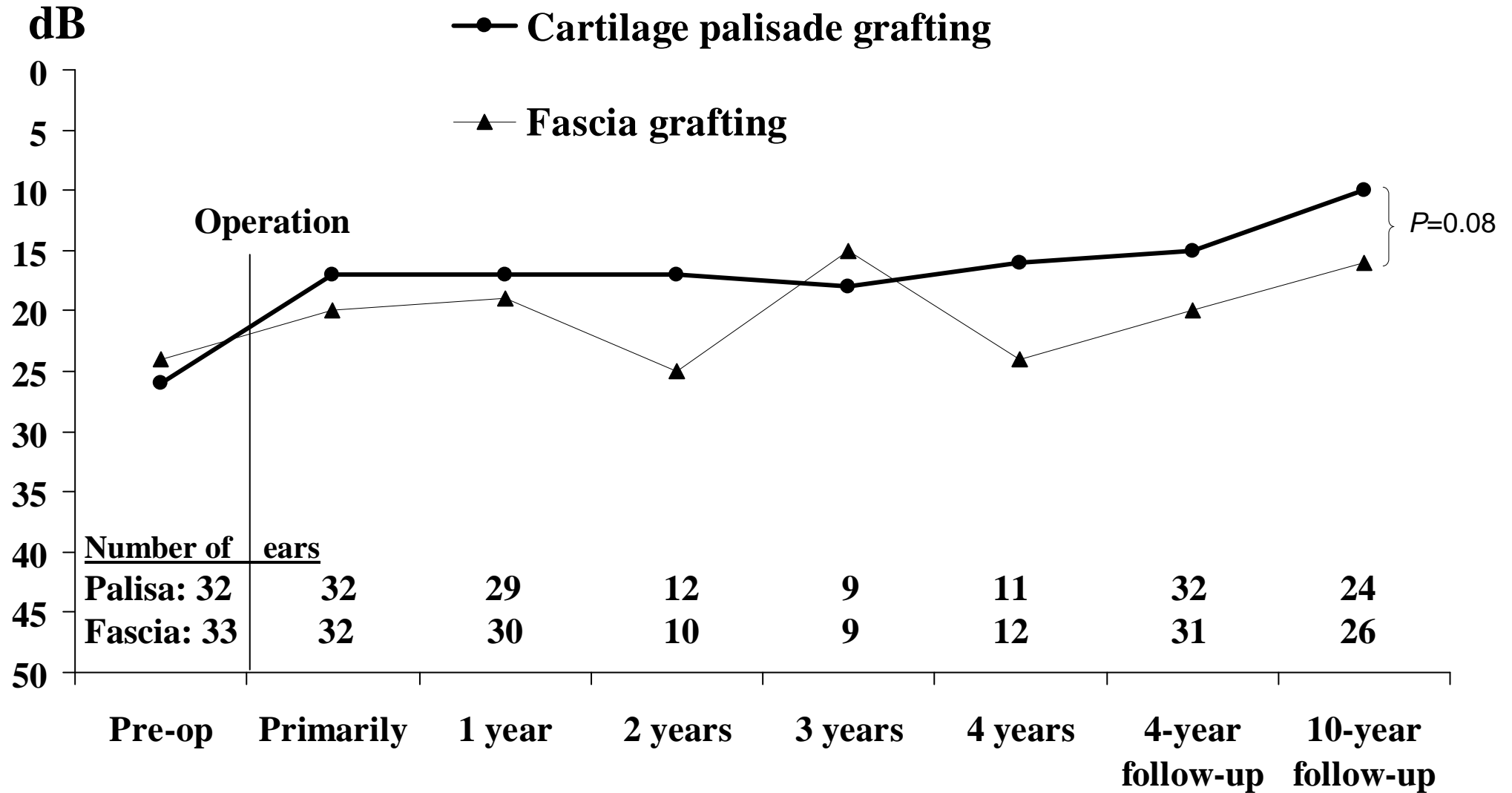
3 years

4 years

4-year
follow-up

10-year
follow-up

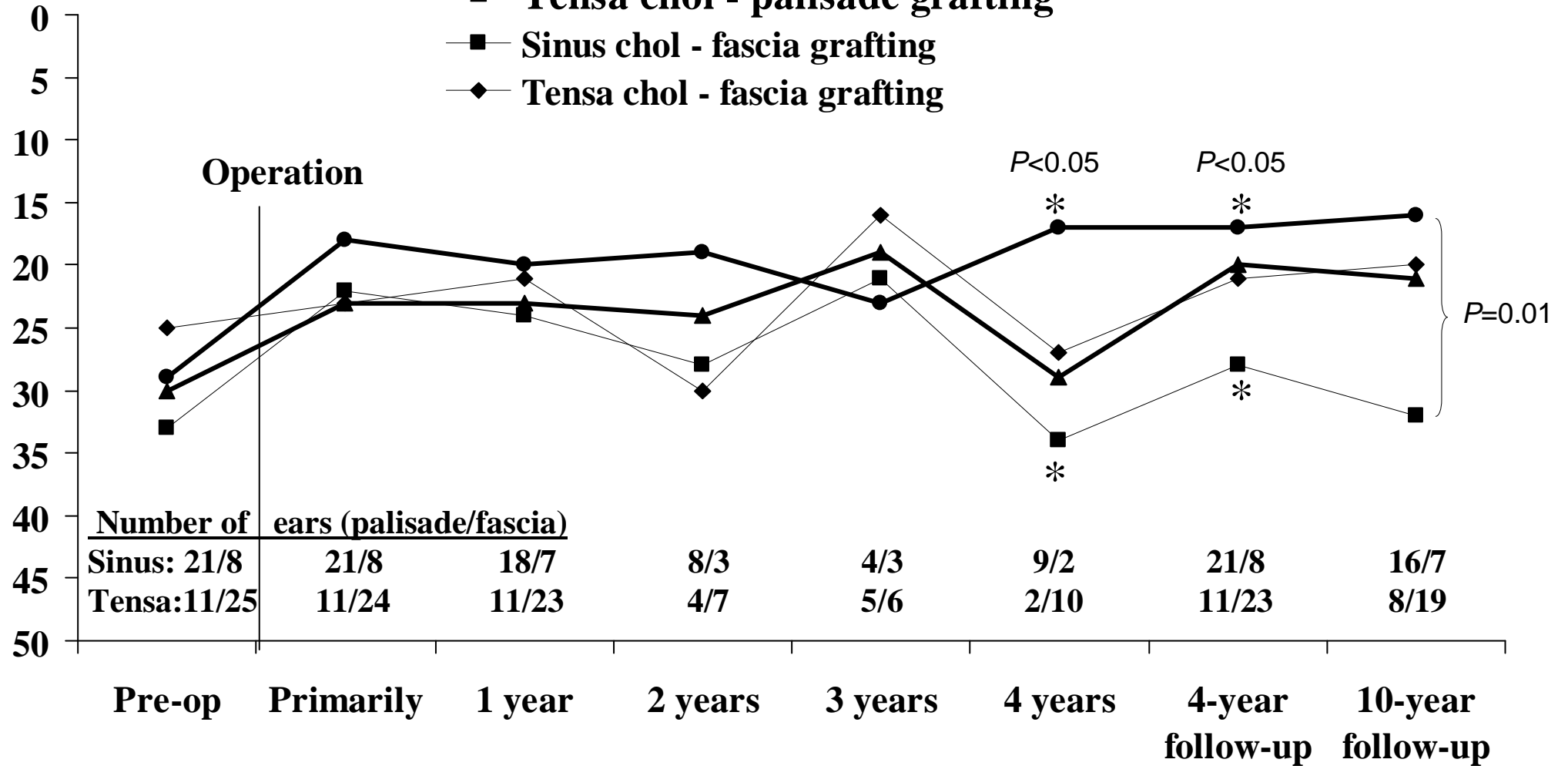
Mean Air-bone gap



Mean PTA

dB HL

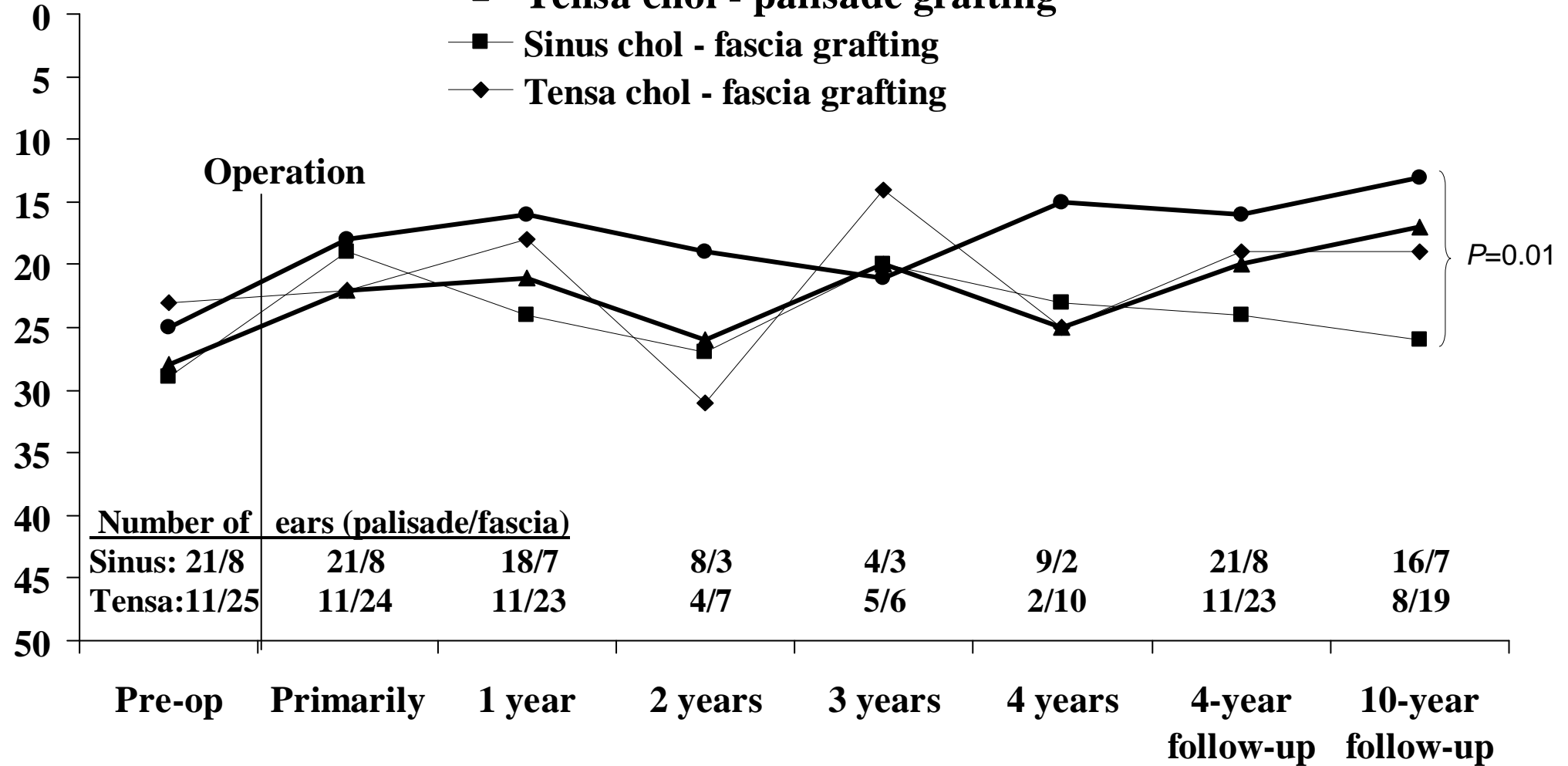
- Sinus chol - palisade grafting
- ▲ Tensa chol - palisade grafting
- Sinus chol - fascia grafting
- ◆ Tensa chol - fascia grafting



Mean SRT

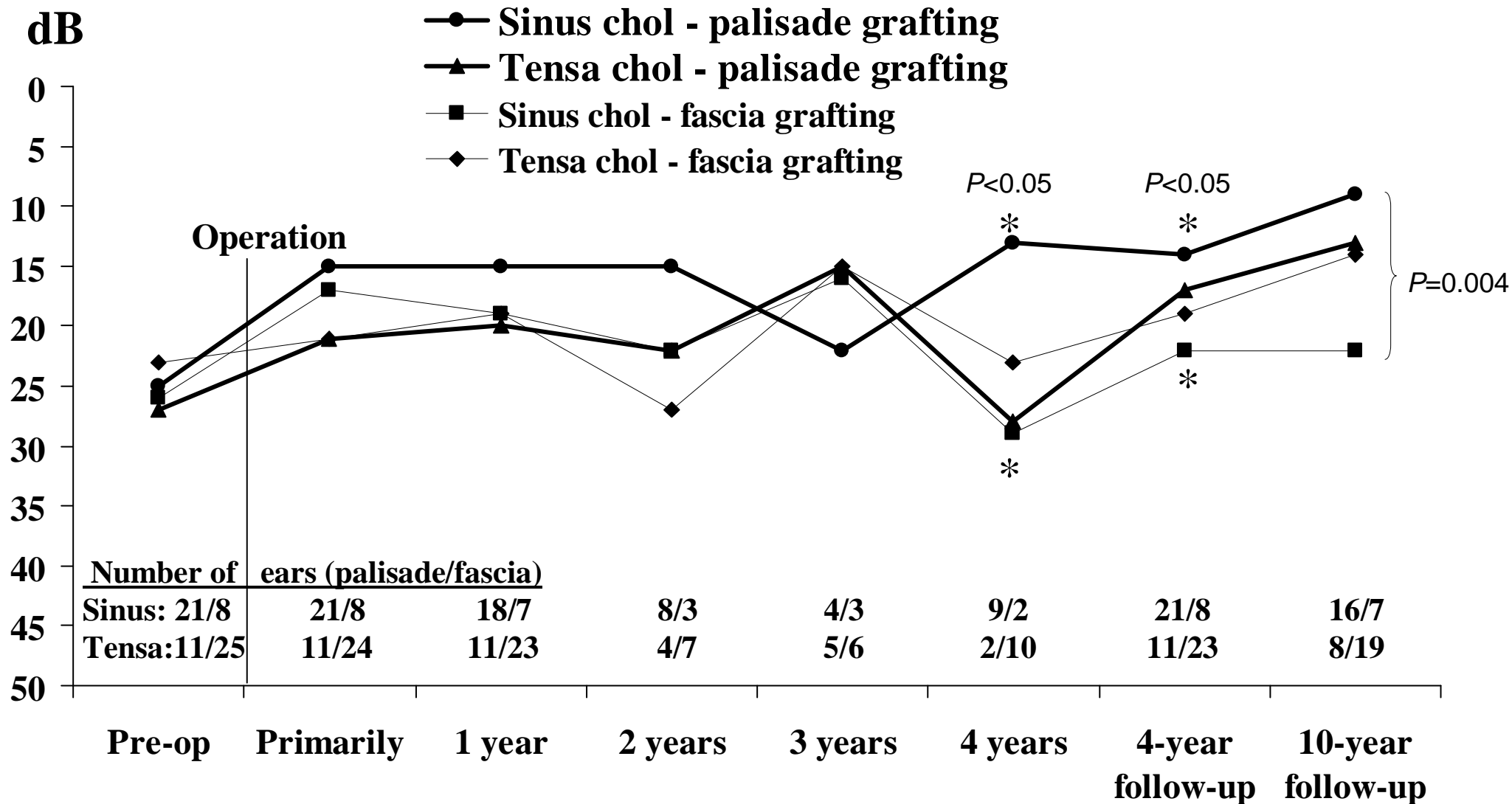
dB HL

- Sinus chol - palisade grafting
- ▲ Tensa chol - palisade grafting
- Sinus chol - fascia grafting
- ◆ Tensa chol - fascia grafting



	Number of ears (palisade/fascia)	
Sinus:	21/8	21/8
Tensa:	11/25	11/24

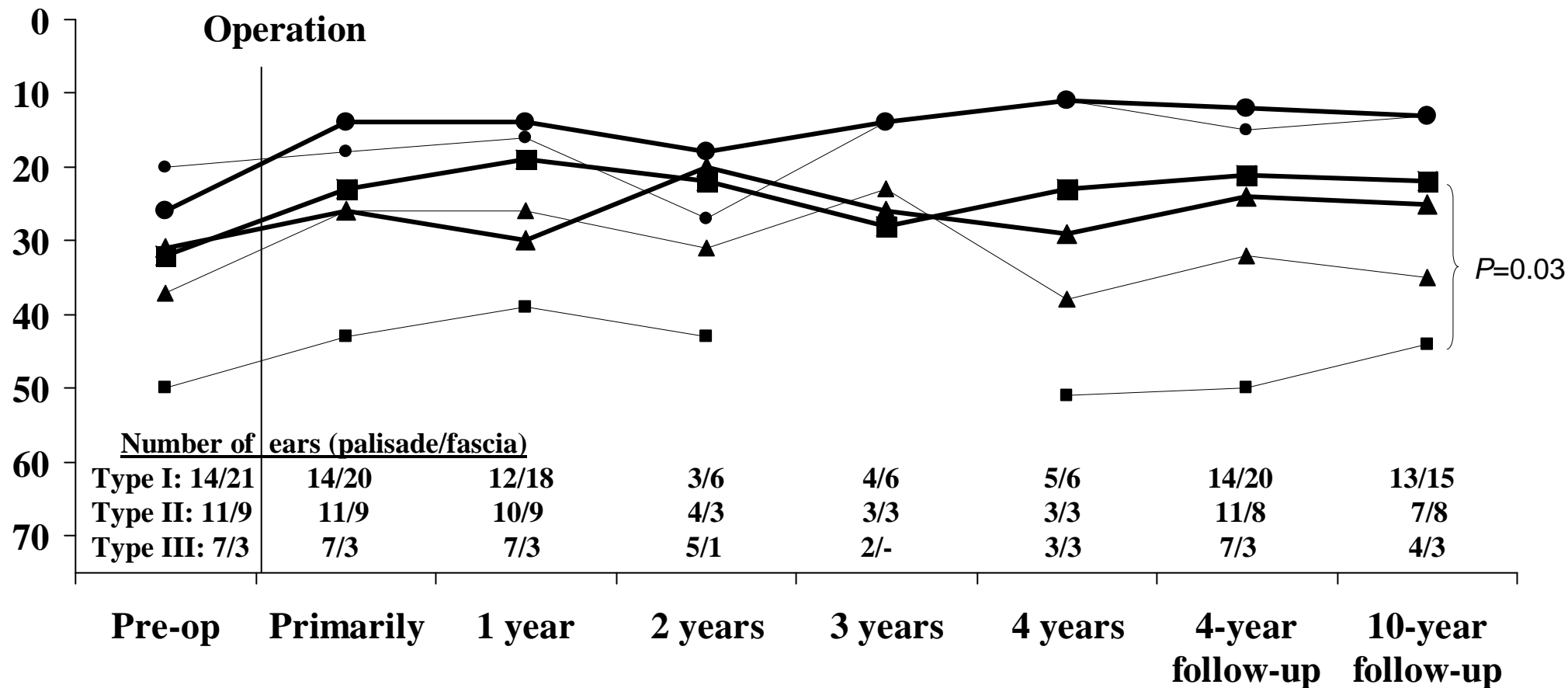
Mean Air-bone gap



Mean PTA

- Type I Palisades
- ▲ Type II Palisades
- Type III Palisades
- Type I Fascia
- ▲ Type II Fascia
- Type III Fascia

dB HL



Number of ears (palisade/fascia)

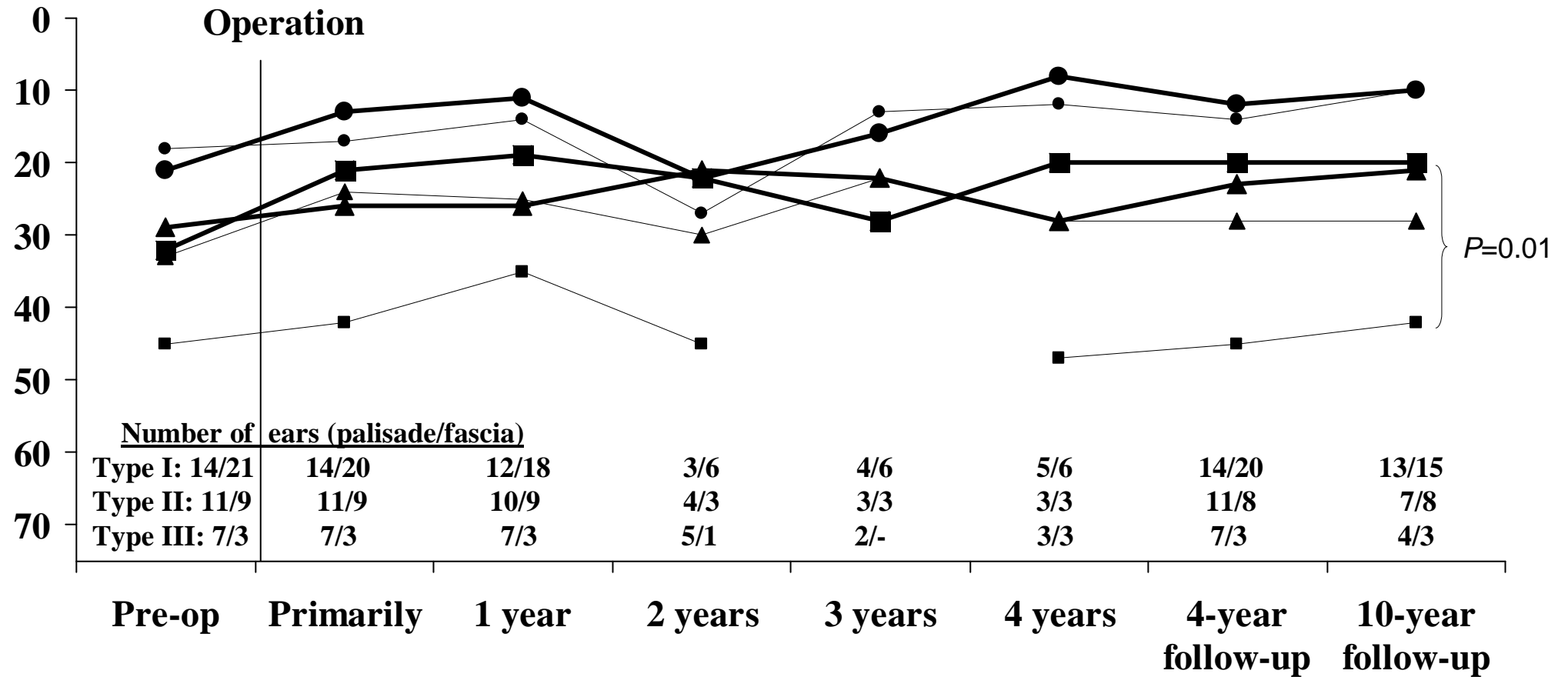
Type I:	14/21	14/20	12/18	3/6	4/6	5/6	14/20	13/15
Type II:	11/9	11/9	10/9	4/3	3/3	3/3	11/8	7/8
Type III:	7/3	7/3	7/3	5/1	2/-	3/3	7/3	4/3

Pre-op Primarily 1 year 2 years 3 years 4 years 4-year follow-up 10-year follow-up

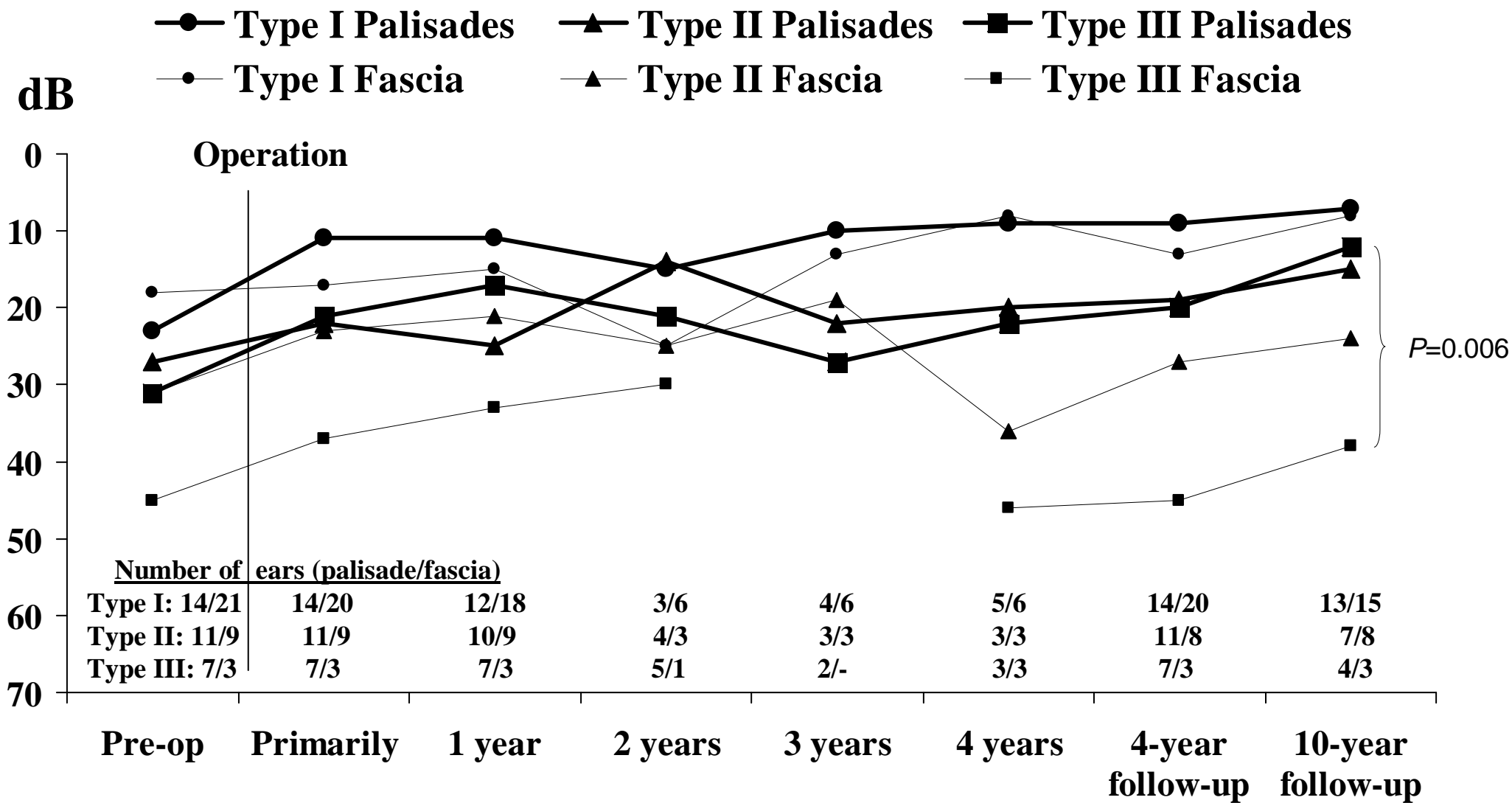
Mean SRT

● Type I Palisades ▲ Type II Palisades ■ Type III Palisades
 ● Type I Fascia ▲ Type II Fascia ■ Type III Fascia

dB HL



Mean Air-bone gap



CONCLUSIONS

- * Cartilage palisade grafting is superior with respect to prevention of long-term eardrum retraction.
- * Cholesteatoma recurrence and eardrum perforation appears to be independent of grafting material, although these results may be due to type 2 error (low number of ears).
- * In sinus cholesteatoma and in type III tympanoplasty, the long-term hearing results are better when grafting cartilage palisades.