

Influence of Surgical Technique on Symptom Resolution in Superior Semicircular Canal Dehiscence: a meta-analysis

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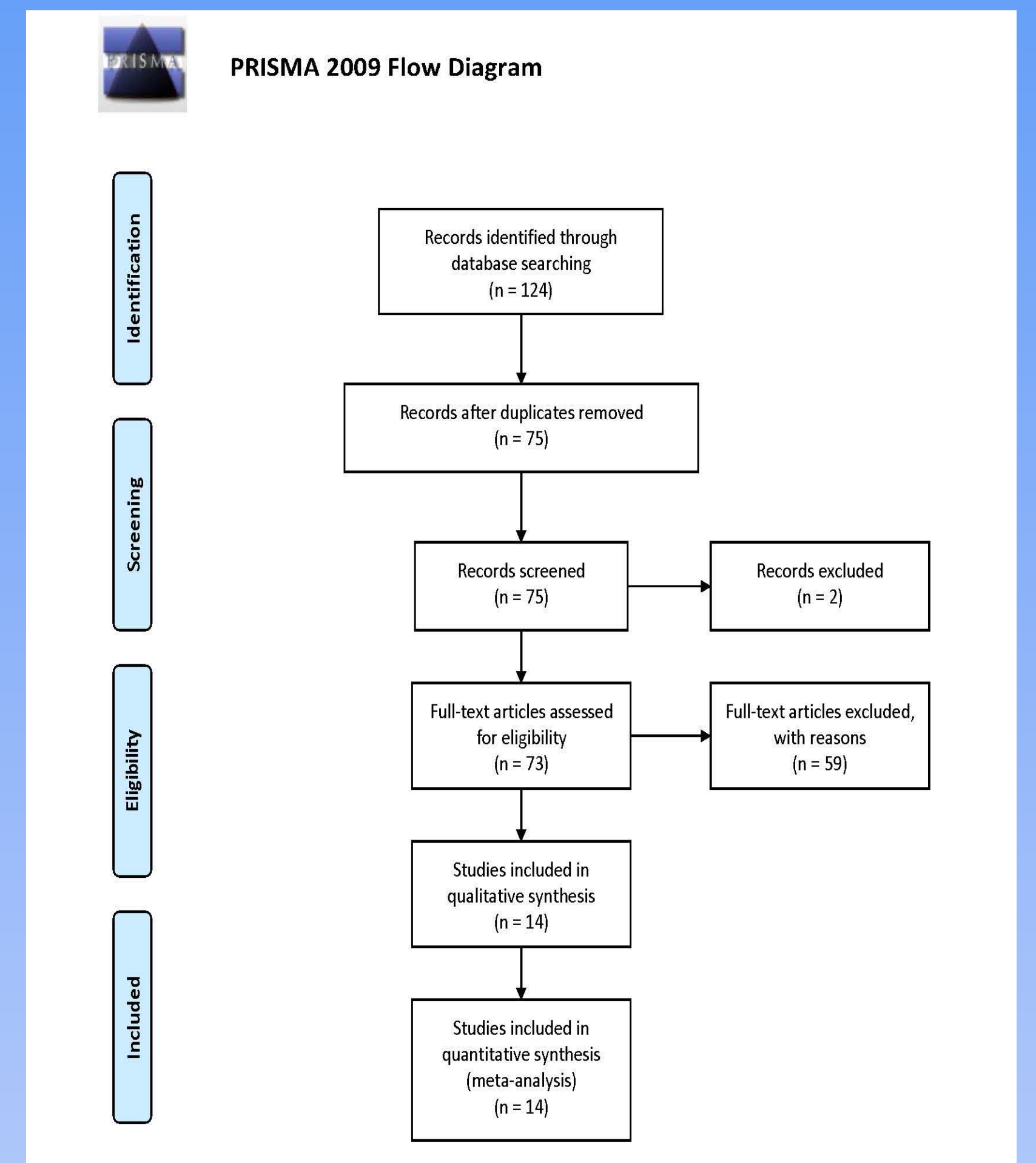
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INTRODUCTION

Superior semicircular dehiscence (SSCD) leads to a myriad of symptoms, including, but not limited to bone-conduction hyperacusis and vertigo with loud sounds or changes in pressure. Multiple surgical techniques were developed to close off the additional communication between the semicircular canal and the middle fossa. Thus, the objective was to determine the effect of surgical approach on symptom resolution in treating SSCD.

The PubMed and Scopus databases were searched by two authors independently. Articles that reported surgical treatment of SSCD (plugging or resurfacing) with a minimum of five patients were included. Literature reviews and articles including patients with SSCD not treated surgically or treated with the capping technique were excluded. If multiple articles included the same patient cohort, the most recently published article was included. Data on subjective symptoms and objective vestibular/audiometric findings were collected.

METHODS



RESULTS

A total of **14 articles** with **178 patients** treated with plugging (n=153) or resurfacing (n=25) met inclusion criteria.

Figure 1. Meta-analysis of cVEMP outcomes before and after surgical plugging

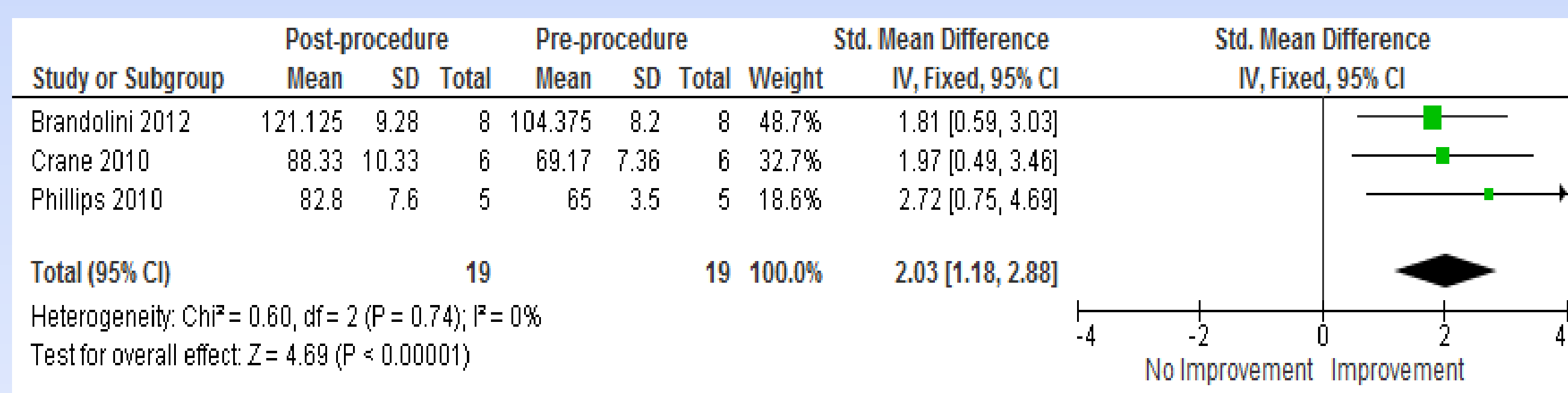


Figure 2. Meta-analysis of ABG outcomes before and after surgical plugging

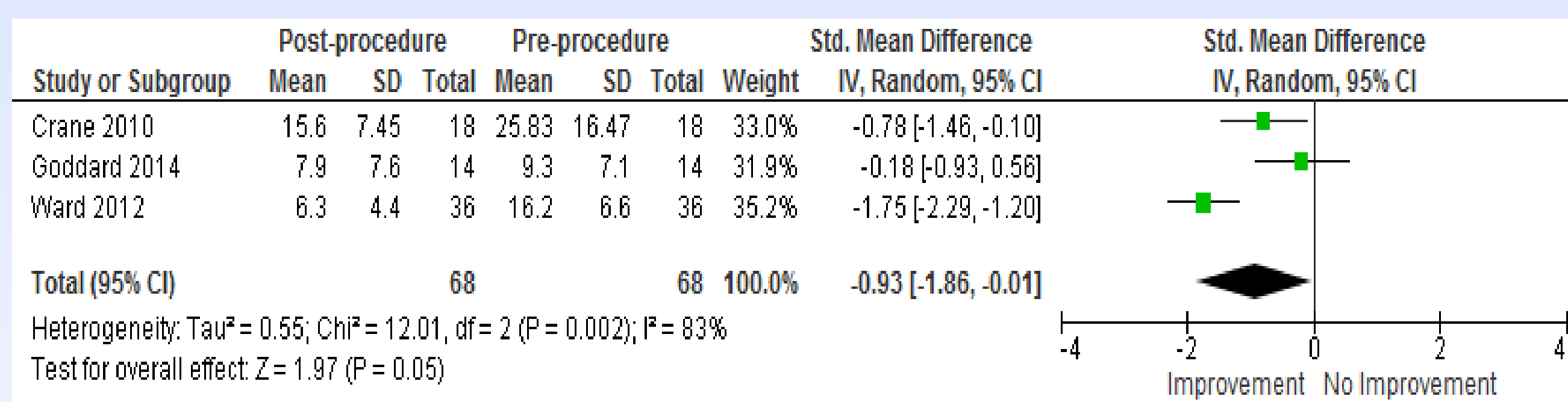


Table 1. Meta-analysis of proportions for symptoms resolution in surgical plugging and resurfacing

Symptom	Plugging (n=153)	Resurfacing (n=25)	p-value
Chronic disequilibrium	74% (60%-86%)	87% (65%-97%)	0.5752
Pressure-induced vertigo	87% (63%-99%)	86% (54%-99%)	0.6418
Noise-induced vertigo	98% (86%-100%)	85% (59%-98%)	0.3886
Pulsatile tinnitus	81% (66%-92%)	87% (55%-99%)	0.9773
Tinnitus	63% (40%-82%)	55% (27%-84%)	0.9977
Hearing loss	69% (46%-87%)	73% (41%-94%)	0.8251
Aural fullness	85% (73%-93%)	75% (41%-95%)	0.8426
Autophony	91% (83%-96%)	84% (61%-97%)	0.7244
Tullio	98% (87%-100%)	82% (54%-97%)	0.3629

CONCLUSIONS

Both techniques improve symptoms in patients with SSCD. Plugging had a tendency to more effectively resolve symptoms than resurfacing. Surgeon preference may bias the surgical approach taken in determining symptom improvement. In addition to subjective symptom resolution, objective tools should be developed to confirm surgical success.

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