Coblation as an Alternative for Cold Dissection Tonsillectomy in Paediatric Patients: A Systematic Review and Meta-Analysis

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Introduction
There are two main considerations for a tonsillectomy in paediatric patients, they are obstructive sleep apnoea and recurrent tonsillitis. There are a variety of techniques that are commonly used with some having advantages over others. Cold dissection is the most commonly used technique and has the lowest incidence of post-operative haemorrhage; coblation is a newer technique which causes less post-operative pain but has a relatively higher post-operative haemorrhage rate.

Objective
This study evaluates the peri-operative outcomes in paediatric tonsillectomy patients by comparison of coblation and cold dissection techniques.

Methods
Systematic review of all studies up to October 2017 (Figure 1), without language restriction were identified from MEDLINE, Cochrane (1960–2017), and EMBASE (1991–2017). Further searches were performed using the bibliographies of articles and abstracts. All studies reporting a comparison between coblation tonsillectomy and cold dissection tonsillectomy were searched; combined adult and paediatric studies along with studies with only adults were excluded. Peri-operative outcomes were recorded; pain was the primary outcome, secondary outcomes included intraoperative blood loss, primary and secondary haemorrhage along with operative time.

Results
10 studies with a total of 890 patients contributed to the summative outcome. Coblation tonsillectomy when compared to Cold Dissection tonsillectomy gave a lower peak pain score (p=0.001), had less intraoperative blood loss (p<0.00001) and a shorter operative time (p<0.0001). The aforementioned results are demonstrated in Figures 2, 3 and 4 respectively. There were two studies which had results appearing to be anomalous for intraoperative blood loss, these studies were removed and analysis performed again, there was no change in statistical significance. There was no significant difference between the two operative technique groups for both primary (p>0.05) and secondary haemorrhage (p>0.05).

Conclusion
Coblation tonsillectomy technique offers better peri-operative outcomes when compared to cold dissection. As pain is one of the biggest consequences of tonsillectomy, if coblation tonsillectomy reduces the impact of pain in children, coblation tonsillectomy should be offered to parents before cold dissection tonsillectomy.