Efficacy and safety of the "mother's kiss" technique: a systematic review of case reports and case series

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CRD summary
This review concluded that the 'mother's kiss' technique was a useful and safe first-line option for the removal of foreign bodies from the nasal cavities of children. The reliability of this finding is uncertain due to poor reporting of review processes, poor quality of included studies and lack of information on the statistical techniques used which may influence the results.

Authors' objectives
To assess the efficacy and safety of the 'mother's kiss' technique (involving blowing into a child's mouth) for removal of foreign bodies in children's nasal cavities.

Searching
Six databases were searched (including MEDLINE and CINAHL) up to September 200; search terms were reported. Trials registers and online portals also were searched and references were checked. No language or location restrictions were applied. Reviewers contacted British ear, nose and throat surgeons in an attempt to identify unpublished studies.

Study selection
Any study that reported the effectiveness and/or safety of the mother's-kiss technique or equivalent for the removal of foreign bodies (visible or not) from the nasal cavities of children was eligible for inclusion. The primary outcome was success rate of extraction of the foreign body and any reported adverse effects. Secondary outcomes included reduction in the proportion of cases where a general anaesthetic was needed to remove the foreign body.

The included studies were a mixture of prospective or retrospective case series, and case reports. Studies had been conducted in the UK, Canada and Denmark. Most participants were aged five years or younger; two studies also included children up to the age of eight years. Most studies included a mixture of girls and boys; none were restricted by gender. In all but one study, the person who performed the technique was the parent. Objects removed varied and included smooth regular objects (such as beads, peas) and irregular objects (like magnet, sunflower seed, toy part). Settings were usually hospital emergency departments.

The authors did not explicitly report how many reviewers selected studies for inclusion.

Assessment of study quality
Study quality was assessed using the Newcastle-Ottawa scale. The authors did not report how many reviewers assessed the included papers on quality criteria.

Data extraction
Success rates and incidence of adverse effects were extracted for each study. Rates of anaesthesia use were also extracted. Primary authors were contacted for clarification where necessary.

The authors did not report how many reviewers performed the data extraction.

Methods of synthesis
Data were presented in tables and narratively. A quantitative synthesis appears to have been conducted but no further details were reported. Factors affecting success and clinical heterogeneity were explored narratively.

Results of the review
Eight studies were included in the review: six case series (152 children) and two single case reports (two children). Results from the quality assessment indicated that two out of eight studies were truly representative, two out of eight studies selected patients on a priori criteria, and only two studies had sought and systematically documented adverse
effects. All studies used secure written records to determine exposure, reported sufficient follow-up, and objectively assessed the main outcomes.

Combining all case series data (six studies), the success rate of the mother’s-kiss technique in removing foreign bodies was 59.9% (95% CI 52 to 67). There were no significant differences when comparing success rates for smooth regular objects versus irregular objects where reported.

No adverse effects were reported in any of the published studies.

Two studies reported rates of general anaesthesia use. One study reported a reduction from 32.5% to 3.2% over comparative six-month periods after the introduction of the mother’s-kiss technique. The second study reported a non-significant reduction in rates of general anaesthesia when the mother’s-kiss technique was used compared with cases where the technique was not attempted.

**Authors’ conclusions**

Evidence from case series and case reports suggests that the ‘mother’s kiss’ technique was a useful and safe first-line option for the removal of foreign bodies from the nasal cavities of children.

**CRD commentary**

The review addressed a clear clinical question. The literature search was extensive, including grey literature, and was not restricted by publication type, language or country of origin. Language and publication biases were unlikely to have influenced this review. The review processes were poorly reported, which made it difficult to rule out reviewer error or bias in study selection, data extraction or quality assessment phases.

The included studies were quality assessed and these results were clearly presented. A statistical synthesis appears to have been conducted, but lack of details on the methods used made it difficult to assess the appropriateness of the analysis or reliability of the conclusions.

The reliability of the authors’ conclusions is uncertain due to poor reporting of review processes and statistical methods, with a relatively low level of evidence available for review.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that pre-registered, large consecutive prospective case series were needed in this area, in particular to compare different positive-pressure techniques and factors around the foreign body location.

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