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LETTERS TO THE EDITOR

Dear Editor,

UNUSUAL PRESENTATION OF AN ODONTOGENIC CYST IN A CHILD

I wish to draw your attention to an unusual presentation of an odontogenic cyst in a 4-year-old boy.

The patient was referred to the oral and maxillofacial department by his general practitioner following a 4-month history of chronic bilateral labial swelling. The mother gave a history of trauma at 2 years of age when the patient had knocked his face when learning to walk. On examination there was bilateral hard bony swelling of the maxilla from the upper right lateral incisor to the upper left lateral incisor causing fullness to the upper lip. There were no signs of acute infection, caries or discolouration of teeth. However, the upper central incisors were mobile. Fibrous dysplasia, ameloblastoma and odontogenic cysts were included in the list of differential diagnoses.

Following the initial appointment, the patient underwent a computerised tomography scan and incisional biopsy under a general anaesthetic to aid diagnosis and treatment planning. The computerised tomography scan revealed two well-defined unilocular radiolucencies associated with the roots of the first maxillary incisors with no aggressive bony features (Fig. 1). The specimen showed a cyst lined by non-keratinising squamous epithelium with underlying active chronic inflammation and fibrosis. A diagnosis of radicular cysts was later confirmed by enucleation of the cysts with histology.

Radicular cysts are inflammatory in origin and occur commonly after pulp necrosis of a carious or traumatised tooth.[1]

Fig. 1 Computerised tomography scan revealing two unilocular radiolucencies associated with the roots of the first maxillary incisors.

Radicular cysts are often asymptomatic unless there is an infection or the cyst has become large enough to cause a swelling. In some cases, these cysts are initially identified by dental radiography.[2] Radicular cysts are the most common type of cyst affecting the jaws; however, reports of radicular cysts affecting the deciduous dentition are extremely rare. It has been estimated that less than 3.3% of radicular cysts are associated with deciduous teeth.[3]

Patients following a history of trauma should be encouraged to visit a general dental practitioner for regular follow-up.[2] Clinicians should be aware that radicular cysts do occur in paediatric patients and early detection and referral may avoid extensive surgery.[4]

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Conflict of interest: None declared.

References

1 Toomarian L, Moshref M, Mirikarimi M, Lofti A, Beheshti M. Radicular cyst associated with a primary first molar: A case report. *J. Dent. (Tehran)* 2011; **8**: 213–7.
2 Smith A, Cowpe J. Radicular cyst arising from a traumatized primary incisor: A case report of a rare complication that emphasizes the need for regular follow up. *Dent. Update* 2005; **32**: 109–13.
3 Mass E, Kaplan I, Hirshberg A. A clinical and histopathological study of radicular cysts associated with primary molars. *J. Oral Pathol. Med.* 1995; **24**: 458–61.
4 Nair P. New perspectives on radicular cysts: Do they heal? *Int. Endod. J.* 1998; **31**: 155–60.

Dear Editor,

META-ANALYSIS OF SLEEP DURATION AND OBESITY IN CHILDREN: FIXED EFFECT MODEL OR RANDOM EFFECT MODEL?

We read with interest the systematic review and meta-analysis by Li *et al.*[1] published in the Journal of Paediatrics and Child Health. The study describes a meta-analysis which tries to show whether sleep duration is associated with higher risk of obesity. It included 12 prospective cohort studies involving about 44 200 participants. The study concluded that short sleep duration is associated with a 45% increased risk of subsequent obesity in children.[1]

Taking into account certain statistical issues in this meta-analysis, the pooled relative risk (RR) of the association between obesity and short sleep duration had some level of underestimation. The underestimation stemmed from a common problem in meta-analysis that the random effects model was employed in the presence of

significant publication bias. The authors in the field of meta-analysis have a common conception that random effects model meta-analysis yield more conservative estimates than fixed effect model, especially when there is observable heterogeneity among studies. But, we can discuss that in the random effect model attributed weights are very similar across studies with different sample size and different precision, therefore the pooled estimation derived from a random effect model can be highly biased especially in the presence of publication bias.[2,3] In opposite direction, the fixed effect model allocate more weight to larger studies.[2] In such a scenario, pooled RR from a fixed effect model is more conservative in the presence of publication bias. Therefore, we reanalyzed the paper information to estimate how selection of a random effect model in the presence of publication bias can affect Li *et al.*'s reported results. Contour-enhanced funnel plot was used for assessing the presence of publication bias. As Figure 1 shows, there is a strong asymmetry in the plot; studies with larger RR (and less precision) clustered at the bottom right of the pooled log RR in the plot. This result in together with significant egger's publication bias test ($b = -2.41$, $P = 0.03$) indicate observable publication bias in this study. Considering the presence of publication bias, we used a fixed effect model and the pool estimate was RR 2.14 (95% CI 2.10–2.18) (Fig. 2). Indeed, fixed effect model estimation indicates that the risk of obesity can be 200% in children with short sleep duration. But, we should bear in mind that the fixed effect model presented gives almost all weight to one study, and the pooled RR is therefore rather a report of the result of one large study (93.2% weight allocated to one cohort study in Fig. 2) than a meta-analysis of all available evidence. On the other view, we can discuss that there is little evidence for having a conclusive estimation for the association between sleep duration and obesity in children. In conclusion, our result based on fixed effect model is similar with Li *et al.*[1] and both indicate a medium positive effect, but the two analyses disagree on the size of the pooled RR. Conclusive interpretation of the magnitude of the effect needs further large scale prospective cohort studies.

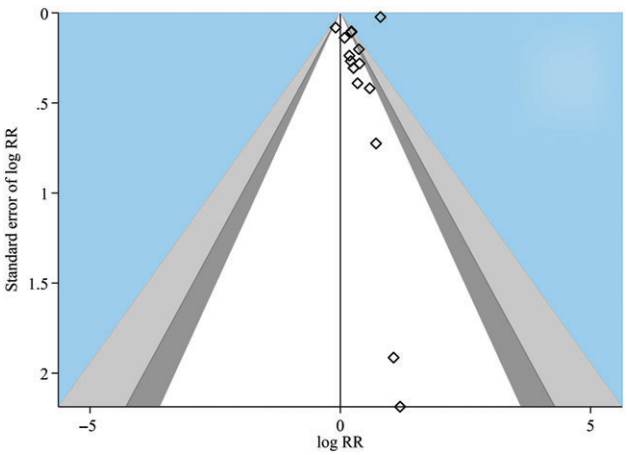

Fig. 1 Contour-enhanced funnel plot to assess the publication bias and small study effect. Diamond represents the correspondent *P* value of each study. (◇), Studies; (▒), $P < 1\%$; (▒), $1\% < P < 5\%$; (▒), $5\% < P < 10\%$; (□) $P > 10\%$.

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References

1 Li L, Zhang S, Huang Y, Chen K. Sleep duration and obesity in children: A systematic review and meta-analysis of prospective cohort studies. *J. Paediatr. Child Health* 2017; **53**: 378–85.
2 da Costa BR, Juni P. Systematic reviews and meta-analyses of randomized trials: Principles and pitfalls. *Eur. Heart J.* 2014; **35**: 3336–45.
3 Nazarzadeh M, Bidel Z, Moghaddam A. Meta-analysis of diabetes mellitus and risk of hip fractures: Small-study effect. *Osteoporos. Int*. 2016; **27**: 229–30.

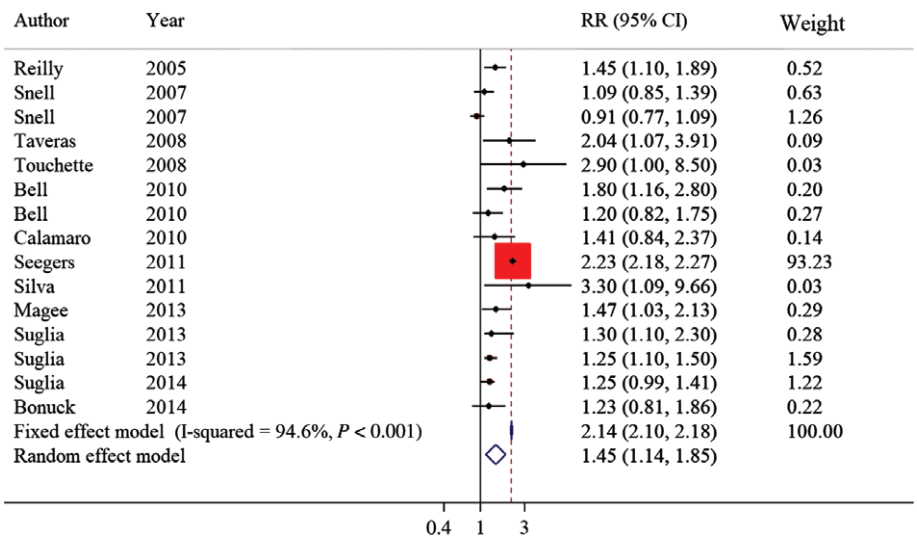

Fig. 2 Random and fixed effect model meta-analysis for estimation of the association between short sleep duration and obesity. Solid line represent relative risk (RR) = 1; dotted line represent pooled estimation of RR based on fixed effect model; size of square represent study weight. Weight: fixed effect model weighting. CI, confidence interval.

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