Peer Review File

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Reviewer A

Comment 1: *This is a very significant paper. However, the following points need to be considered. Factors that affect sinus mucosa thickness include septal wall, smoking, systemic diseases, nasal septal curvature, etc. other than dental condition, but they are not mentioned in this study. Please consider these factors in your research.*

Reply 1: Thank you very much for your particularly constructive suggestions. As mentioned in your comments, factors affecting sinus mucosa thickness include nasal septal wall, smoking, systemic diseases, nasal septal curvature, etc. in addition to dental condition. By reviewing the 570 CBCT images in this study, we collected the information of the maxillary sinus (MS) septal walls and studied the relationship between MS septal walls and MS abnormalities. The results of univariate analysis showed that MS septal walls was not significantly correlated with MS abnormalities. Due to the limited view field of CBCT in the study, some CBCT image couldn't show complete nasal septum, so accurate data of nasal septal curvature cannot be obtained. During the implementation of this retrospective study, we tried to collect patients' smoking history, systemic diseases, and otolaryngology history, etc. However, some patients did not want to provide relative information due to privacy, so it was difficult to obtain accurate data. So, we discussed the limitation of this retrospective study in the revised manuscript. And in our following prospective study, we have included patients who agreed to provide their general condition and medical history, and the above-mentioned factors will be considered as influencing factors.

Changes in the text 1:

(1) We added descriptions to show the reason for considering MS septal walls as a factor influencing MS abnormalities in the Introduction part. The added part is underlined as follows:
(See Page 6, Line 86-90)
The MS septal walls are barriers of cortical bone that divide the MS floor into multiple compartments (10). The relationship between MS septal walls and MS abnormalities is gaining attention but is controversial (11-13). Therefore, we considered MS septal walls as an influencing factor of MS abnormalities.

(2) We added descriptions of MS septal walls identification in the Methods part. The added part is underlined as follows:
(See Page 8, Line 144-145)
The presence of a septal wall was defined as a septal wall of at least 2.5 mm in height on CBCT (15).

(3) We added both text and table descriptions of the univariate analysis results in the Results part. The added descriptions are underlined, and the added contents in tables are marked red as follows:
(a) (See Page 10, Line 188-191, and Table 1)

The associations between MS abnormalities and odontogenic factors are shown in Table 1. Individual analyses showed that the prevalence of MS abnormalities was significantly associated with age, sex, PAL, PBL, CPEL, and missing teeth (P < 0.001), but not with MS septal walls (P = 0.126).

Table 1 Associations between maxillary sinus abnormality and the demographic, odontogenic factors and maxillary sinus septal wall

			Individual analyses		Adjusted analyses		
Variables	**Absence**	**Presence**	**χ^2**	**P value**	**OR**	**95% CI**	**P value**
Age			104.100	< 0.001***			
0-18	6(75%)$_{a,b,c}$	2(25%)$_{a,b,c}$			1		0
19-25	295(73%)$_{a}$	109(27%)$_{a}$			1.108	0.218-5.632	0.902
26-40	217(58.3%)$_{a}$	155(41.7%)$_{a}$			1.954	0.384-9.942	0.419
41-60	101(40.1%)$_{a}$	151(59.9%)$_{a}$			2.339	0.452-12.104	0.311
> 60	32(30.8%)$_{a}$	72(69.2%)$_{a}$			2.924	0.538-15.898	0.214
Sex			17.975	< 0.001***			< 0.001***
Female	432(62.1%)	264(37.9%)			1		
Male	219(49.3%)	225(50.7%)			1.653	1.259-2.170	
PAL			66.380	< 0.001***			< 0.001***
Absence	623(61.3%)	394 (38.7%)			1		
Presence	28(22.8%)	95(77.2%)			5.771	3.636-9.160	
PBL			68.888	< 0.001***			< 0.001***
Absence	620(61.5%)	388(38.5%)			1		
Presence	31(23.5%)	101(76.5%)			2.778	1.718-4.491	
CPEL			99.965	< 0.001***			< 0.001***
Absence	645(61.4%)	406(38.6%)			1		
Presence	6(6.7%)	83(93.3%)			13.818	5.812-32.855	
Missing teeth			22.353	< 0.001***			0.640
Absence	596(59.7%)	402(40.3%)			1		
Presence	55(38.7%)	87(61.3%)			1.113	0.711-1.741	
MS septal wall			2.336	0.126			
Absence	520(56.0%)	408(44.0%)					
Presence	131(61.8%)	81(38.2%)					

PAL, periapical lesions; PBL, periodontal bone loss; CPEL, combined periodontal–endodontic lesions; MS, maxillary sinus; *P<0.05, **P<0.01, ***P<0.001; The corresponding data of categorical variables are frequency and composition ratio.

(b) (See Page 11, Line 199-204, and Table 2)

The associations between the occurrence of MS abnormalities and the infection type, the type of tooth infected, and INF–MSF in units with a single infected tooth are shown in Table 2. Individual analyses showed that the prevalence of MS abnormalities was significantly associated with sex (P = 0.010), infection type (P = 0.012), type of tooth infected (P = 0.004), and INF–MSF (P = 0.003), but not with the presence of MS septal walls (P = 0.574).

Table 2 Associations between maxillary sinus abnormality and the demographic, odontogenic factors and maxillary sinus septal wall in units with a single infected tooth

			Individual analyses		Adjusted analyses		
Variable	**Absence**	**Presence**	**χ^2/z**	**P value**	**OR**	**95% CI**	**P value**
Age			4.472	0.215			
19-25	10(37%)	17(63%)					
26-40	10(20.0%)	40(80.0%)					
41-60	14(20.0%)	56(80.0%)					
> 60	5(16.1%)	26(83.9%)					
Sex			6.704	0.010*			0.045*
Female	29(29.0%)	71(71.0%)			1		
Male	10(12.8%)	68(87.2%)			2.413	1.021-5.705	
Infection type			8.870	0.012*			
PAL	22(24.4%)$_{a}$	68(75.6%)$_{a}$			1		0.244
PBL	16(29.1%)$_{a}$	39(70.9%)$_{a}$			0.868	0.332-2.275	0.774
CPEL	1(3.0%)$_{b}$	32(97.0%)$_{b}$			5.458	0.669-44.504	0.113
Infected tooth type			8.333	0.004**			0.008**
Premolar	14(40%)	21(60%)			1		
Molar	25(17.5%)	118(82.5%)			3.431	1.379-8.533	
IF-MSF†	5‡(1.4§,8.65¶)	2.4‡(0.7§,5.25¶)	-2.94	0.003**	0.871	0.775-0.980	0.021*
MS septal wall							
Absence	35(22.6%)	120(77.4%)	0.315	0.574			
Presence	4(17.4%)	19(82.6%)					

PAL, periapical periodontitis; PBL, periodontal bone loss; CPEL, combined periodontal–endodontic lesions; IF-MSF, the distance between dental infection and maxillary sinus floor (mm); MS, maxillary sinus; *P<0.05, **P<0.01, ***P<0.001; †Continuous variable; ‡Median; §lower quartile; ¶upper quartile; The corresponding data of categorical variables are frequency and composition ratio.

(4) We added a paragraph to discuss the MS septal walls on MS abnormality in the Discussion part. The added discussions are underlined as follows:
(See Page 15, Line 295-302)
No significant association was detected between the presence of MS septal walls and MS abnormalities in our study, as was associated with Bornstein's study (37). However, one study found that the presence of MS septal walls resulted in MS thickening (11), whereas several studies attributed the thinness of the MS membrane to MS septal walls (12-13). The discrepancies of these findings may be due to the age and ethnicity of the study populations, or the imaging modality used. The effect of MS septal walls on the thickness of the MS membrane must be demonstrated in more carefully designed studies.

(5) We added a paragraph to discuss the limitation of this retrospective study. The added discussions are underlined as follows:
(See Page 17, Line 336-339)
This was a retrospective study, based only on CBCT images and patient medical records. Similar to other CBCT-based studies (1, 18, 29), Factors including smoking, systemic diseases and otolaryngology history, etc. that may affect MS abnormalities were not analyzed as confounding factors, which was the limitation of this study.

Comment 2: *The Type 1 to Type 3 classification is an important classification to consider the effect of aging; please indicate this in the fig and also discuss the effect of aging on sinus volume.*

Reply 2: Thank you very much for your valuable comments. We strongly agree with the view that the Type 1 to Type 3 classification is an important classification to consider the effect of aging, and it's necessary to discuss the effect of aging on sinus volume.

Changes in the text 2:

(1) We added Figure 2 to show the differences of age among the different anatomical relationship groups. The added Figure 2 is below, and the figure legend is underlined as follows:
(See Figure 2 and Figure legend at Page 27, Line 516-519)

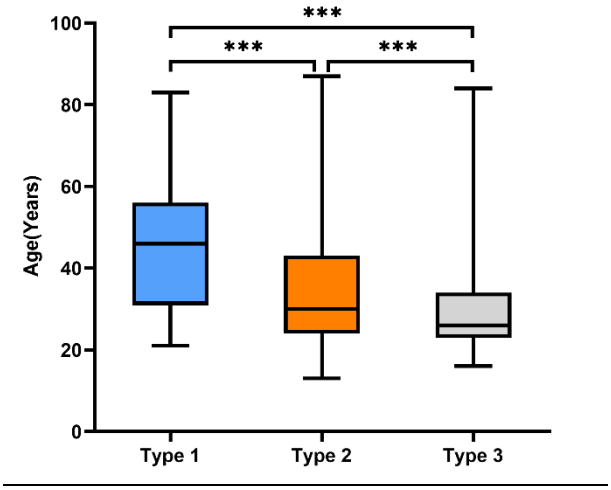

Figure 2 Difference of age among different anatomical relationships between the MS and teeth types: box and whisker plots. The limits of the boxes represent the first and the third quartile, respectively. Whiskers are the minimum and the maximum. The median value is indicated by horizontal lines. $^{***}P<0.001$.

(2) We added a paragraph to discuss the effect of aging on sinus volume in the Discussion part. The added discussions are underlined as follows:
(See Page 17, Line 330-335)
Studies have shown that the maxillary sinus volume typically reaches its maximum in the 30s for men and 20s for women (42), and then decreases with age increase (43-45). In this study, we found that the distance between the maxillary sinus floor and the root tip increased with age, which may reflect the reduction in the maxillary sinus volume in the direction of the alveolar process.

Reference in the revised manuscript:

1. Nunes CA, Guedes OA, Alencar AH, et al. Evaluation of Periapical Lesions and Their Association with Maxillary Sinus Abnormalities on Cone-beam Computed Tomographic Images. J Endod 2016;42:42-6.
10. Pommer B, Ulm C, Lorenzoni M, et al. Prevalence, location and morphology of maxillary sinus septa: systematic review and meta-analysis. J Clin Periodontol 2012;39:769-73.
11. Rancitelli D, Borgonovo AE, Cicciu M, et al. Maxillary Sinus Septa and Anatomic Correlation With the Schneiderian Membrane. J Craniofac Surg 2015;26:1394-8.
12. Cakur B, Sumbullu MA, Durna D. Relationship among Schneiderian membrane, Underwood's septa, and the maxillary sinus inferior border. Clin Implant Dent Relat Res 2013;15:83-7.
13. Sanchez-Perez A, Boracchia AC, Lopez-Jornet P, et al. Characterization of the Maxillary Sinus Using Cone Beam Computed Tomography. A Retrospective Radiographic Study. Implant Dent 2016;25:762-9.
15. Maestre-Ferrin L, Galan-Gil S, Rubio-Serrano M, et al. Maxillary sinus septa: a systematic review. Med Oral Patol Oral Cir Bucal 2010;15:e383-6.
18. Sakir M, Ercalik YS. Associations between Periapical Health of Maxillary Molars and Mucosal Thickening of Maxillary Sinuses in Cone-beam Computed Tomographic Images: A Retrospective Study. J Endod 2020;46:397-403.
29. Huang YT, Hu SW, Huang JY, et al. Assessment of relationship between maxillary sinus membrane thickening and the adjacent teeth health by cone-beam computed tomography. J Dent Sci 2021;16:275-9.
37. Bornstein MM, Seiffert C, Maestre-Ferrin L, et al. An Analysis of Frequency, Morphology, and Locations of Maxillary Sinus Septa Using Cone Beam Computed Tomography. Int J Oral Maxillofac Implants 2016;31:280-7.
42. Whyte A, Boeddinghaus R. The maxillary sinus: physiology, development and imaging anatomy. Dentomaxillofac Radiol 2019;48:20190205.
43. Aktuna BC, Colak M, Adiguzel O, et al. Three-dimensional evaluation of maxillary sinus volume in different age and sex groups using CBCT. Eur Arch

Otorhinolaryngol 2019;276:1493-9.
44. Kalabalik F, Tarim EE. Investigation of maxillary sinus volume relationships with nasal septal deviation, concha bullosa, and impacted or missing teeth using cone-beam computed tomography. Oral Radiol 2019;35:287-95.
45. Wu X, Cai Q, Huang D, et al. Cone-beam computed tomography-based analysis of maxillary sinus pneumatization extended into the alveolar process in different age groups. BMC Oral Health 2022;22:393.

Reviewer B

Comment 1: *The authors investigated the correlation between odontogenic conditions and the presence of maxillary sinus abnormalities using cone-beam computed tomography imaging. It is a current topic of great clinical relevance; however, the objectives and design of the study are unclear. The selection of the subjects/images may greatly influence the results. Inclusion criteria were not described.*

Reply 1: Thank you very much for your valuable comments. We are sorry for not expressing it clearly. We have described the inclusion criteria more clearly and accurately in the manuscript.

Changes in the text 1: The inclusion criteria are identified at Page 6, Line 104- Page 7, Line 107. The revised part is underlined as follows:

Patients who received CBCT examination with a field of view of 16 × 8 cm^2 or 8 × 8 cm^2 in the Department of Stomatology of Peking University Third Hospital between November and December 2021 were included.

Comment 2: *Was the sinus cortex intact in all cases?*

Reply 2: Thank you for your question. We consider the sinus cortex is not intact in all cases. Histological study found bone perforations of MS cortex in areas with root contact (Wehrbein & Diedrich, 1992). In our study, we found that in 57.89% of units, at least one root apex entered the MS and the cortical bone of the MS cortex was incomplete on CBCT, as found in other studies(Abdulghani et al., 2022;Tian, Qian, Xin, Wei, & Gong, 2016). Based on the previous literature, we consider that the sinus cortex in this study was not intact in all cases, although not confirmed by histology.

Changes in the text 2: We added descriptions to discuss whether the sinus cortex was intact in all cases in the Discussion part. The added discussions are underlined as follows: (see Page 16, Line 323- Page 17, Line 325)

Histological study confirmed bone perforations of MS cortex in areas with root contact in previous study (39). So, we consider that the sinus cortex in this study was not intact in all cases, although not confirmed by histology.

Comment 3: *If odontogenic infection were present in two teeth, which criterion for measuring INF-MSF?*

Reply 3: Thank you very much for your valuable comments. Since we did not express it clearly, we are sorry for our misunderstanding. In this study, INF-MSF

was used only in analyzing the correlations between the infection type, tooth position, INF–MSF, and MS abnormality, when we selected units with single tooth infections. We have modified the definition of INF-MSF to the more appropriate position to make the expression more clearer.

Changes in the text 3： We moved the definition of INF-MSF following the correlation study for units with single tooth infections. The revised descriptions were underlined as follows:

(See Page 8, Line 146- Page 9, Line 150)

To analyze the correlations between the infection type, tooth position, INF–MSF, and MS abnormality, we selected units with single tooth infections: a single PAL tooth, a single PBL tooth, or a single CPEL tooth. The shortest distance between the dental infection edge and the maxillary sinus floor (MSF) was recorded as INF–MSF (Fig. 1).

Comment 4: *Also, the authors need to justify the sample size although it is an observational study.*

Reply 4: Thank you very much for your valuable suggestions. We added a paragraph to describe sample size in the manuscript.

Changes in the text 4: We added a paragraph to describe sample size in the Methods part. The added description is underlined as follows.

(See Page 10, Line 171-178)

For all units, a logistic regression analysis of 6 possible influencing factors was performed, requiring at least 30 units with MS abnormality and 30 units without MS abnormality. 489 units with MS abnormality and 651 units without MS abnormality met the sample size requirements for the analysis. Similarly, the logistic regression analsis of units with a single infected tooth required at least 30 units with MS abnormality and 30 units without MS abnormality. 139 units with MS abnormality and 39 units without MS abnormality also met the sample size requirements for the analysis.

Comment 5: *Many variables were used in the study without a plausible justification, such as "missing teeth". There are several studies that show the association of odontogenic infection with sinus membrane thickening, but not with antroliths.*

Reply 5: Thank you very much for your valuable comments. The removal of unhealthy teeth did not completely resolve the thickening of the sinus membrane (Block & Dastoury, 2014). Previous studies have shown a correlation between tooth loss and MS abnormalities (Aksoy & Orhan, 2019; Cao & Yuan, 2021; Kuligowski et al., 2021), so we chose “missing teeth” as an influencing factor. As mentioned in your comments, there are several studies that show the association of odontogenic infection with sinus membrane thickening, but not with antroliths. After further careful review of the literature, we found that antroliths is the intrinsic disease of the MS(White & Pharoah, 2014), and is not associated with odontogenic infection. So we deleted “antrolith” in the MS abnormality classification.

Changes in the text 5:

(1) We deleted “antrolith” in the MS abnormality classification. The modified descriptions are underlined as follows:
(See Page 8, Line 135-137)
Abnormal membrane morphologies included ‘flat’ (horizontal thickening), ‘polypoid’ (dome-shaped thickening), ‘opacified’ (complete sinus opacification) (11), and periostitis (2).

(2) We modified the 6 units with antroliths previously classified as with MS abnormality to without MS abnormality and modified the corresponding results. The changes of the results are concentrated in Table 1 with track changes.

Table 1 Associations between maxillary sinus abnormality and the demographic, odontogenic factors and maxillary sinus septal wall

			Individual analyses		Adjusted analyses		
Variables	**Absence**	**Presence**	**χ2**	**P value**	**OR**	**95% CI**	**P value**
Age			105.998104.100	< 0.001***			
0-18	6(75%)a,b,c	2(25%)a,b,c			1		0
19-25	295(73%)a	109(27%)a			1.102108	0.217218-5.600632	0.907902
26-40	213217(57.358.3%)a	159155(42.741.7%)a			2.0431.954	0.402384-10.3849.942	0.389419
41-60	99101(39.340.1%)a	153151(60.759.9%)a			2.446339	0.473452-12.644104	0.286311
> 60	32(30.8%)a	72(69.2%)a			2.929924	0.539538-15.912898	0.213214
~~Gender~~Sex			16.5617.975	< 0.001***			< 0.001***0.001*
Female	427432(61.42.1%)	269264(38.67.9%)			1		
Male	218219(49.13%)	226225(50.97%)			1.614653	1.23259-2.117170	
PAL			64.17266.380	< 0.001***			< 0.001***
Absence	617623(60.71.3%)	394 400(38.739.3%)			1		
Presence	28(22.8%)	95(77.2%)			5.552771	3.498636-8.8109.160	
PBL			66.5568.888	< 0.001***			< 0.001***
Absence	614620(60.961.5%)	394388(39.138.5%)			1		
Presence	31(23.5%)	101(76.5%)			2.664778	1.649718-4.304491	
CPEL			97.59999.965	< 0.001***			< 0.001***
Absence	639645(60.861.4%)	412406(39.238.6%)			1		
Presence	6(6.7%)	83(93.3%)			13.417818	5.645812-31.8882.855	
Missing teeth			22.7222.353	< 0.001***			0.597640
Absence	591596(59.27%)	407402(40.83%)			1		
Presence	5455(38.7%)	8887(6261.3%)			1.128113	0.722711-1.762741	

Comment 6: *An added point to the Methodology section would be to discuss these papers about the same subject:*
Curi FR, Pelegrine RA, Nascimento MDCC, Monteiro JCC, Junqueira JLC, Panzarella FK. Odontogenic infection as a predisposing factor for pathologic disorder development in maxillary sinus. Oral Dis. 2020 Nov;26(8):1727-1735. doi: 10.1111/odi.13481.
Peñarrocha-Oltra, S., Soto-Peñaloza, D., Bagán-Debón, L., Bagan, J. V., & Peñarrocha-Oltra, D. (2020). Association between maxillary sinus pathology and odontogenic lesions in patients evaluated by cone beam computed tomography. A systematic review and meta-analysis. Medicina Oral, Patologia Oral Y Cirugia Bucal, 25(1), e34-e48.

Reply 6: Thank you very much for your valuable comments. We have read the above literature carefully, and the views are quoted and adequately discussed.

Changes in the text 6: The added discussions are underlined as follows, and the above-mentioned papers were marked red:

(See Page 12, Line 234- Page 13, Line 239)

Some studies have classified MS abnormalities and studied the relationship between different types of MS abnormalities and different types of odontogenic infection (9). In this study, we found that two or more abnormalities frequently occur simultaneously in one MS, and some MS abnormalities cannot be accurately classified after consulting otolaryngologists, so we did not pursue this analysis.

(See Page 16, Line 303-306)

As the effects of multiple infected teeth are probably cumulative, we selected units with a single infected tooth to study the influence of the infection type, the type of infected tooth, and INF–MSF on the occurrence of MS abnormalities, which has rarely been mentioned in previous studies (9).

(See Page 13, Line 253-255)

Some studies found an association between periodontal health and maxillary sinusitis (17, 24, 30-31, 34-35), whereas others found no such relationship (18, 21, 25).

(see Page 14, Line 262-263)

The risk of MS abnormality was significantly higher in the presence of CPEL, consistent with a previous study (31).

(See Page 16, Line 309-312)

In most studies, a close spatial relationship between the apex (17-18, 31-32) or lesion edge (1) of a tooth with PAL and the MSF resulted in more frequent MS abnormalities, whereas no such association was found in a few studies (22).

Reference in the revised manuscript:

1. Nunes CA, Guedes OA, Alencar AH, et al. Evaluation of Periapical Lesions and Their Association with Maxillary Sinus Abnormalities on Cone-beam Computed Tomographic Images. J Endod 2016;42:42-6.

2. Souza-Nunes LA, Verner FS, Rosado L, et al. Periapical and Endodontic Status Scale for Endodontically Treated Teeth and Their Association with Maxillary Sinus Abnormalities: A Cone-beam Computed Tomographic Study. J Endod 2019;45:1479-88.

9. Penarrocha-Oltra S, Soto-Penaloza D, Bagan-Debon L, et al. Association between maxillary sinus pathology and odontogenic lesions in patients evaluated by cone beam computed tomography. A systematic review and meta-analysis. Med Oral Patol Oral Cir Bucal 2020;25:e34-48.

11. Rancitelli D, Borgonovo AE, Cicciu M, et al. Maxillary Sinus Septa and Anatomic Correlation With the Schneiderian Membrane. J Craniofac Surg 2015;26:1394-8.

17. Kuligowski P, Jaron A, Preuss O, et al. Association between Odontogenic and Maxillary Sinus Conditions: A Retrospective Cone-Beam Computed Tomographic Study. J Clin Med 2021;10.

18. Sakir M, Ercalik YS. Associations between Periapical Health of Maxillary Molars and Mucosal Thickening of Maxillary Sinuses in Cone-beam Computed

Tomographic Images: A Retrospective Study. J Endod 2020;46:397-403.
21. Shanbhag S, Karnik P, Shirke P, et al. Association between periapical lesions and maxillary sinus mucosal thickening: a retrospective cone-beam computed tomographic study. J Endod 2013;39:853-7.
22. Lu Y, Liu Z, Zhang L, et al. Associations between maxillary sinus mucosal thickening and apical periodontitis using cone-beam computed tomography scanning: a retrospective study. J Endod 2012;38:1069-74.
24. Phothikhun S, Suphanantachat S, Chuenchompoonut V, et al. Cone-beam computed tomographic evidence of the association between periodontal bone loss and mucosal thickening of the maxillary sinus. J Periodontol 2012;83:557-64.
25. Janner SF, Caversaccio MD, Dubach P, et al. Characteristics and dimensions of the Schneiderian membrane: a radiographic analysis using cone beam computed tomography in patients referred for dental implant surgery in the posterior maxilla. Clin Oral Implants Res 2011;22:1446-53.
30. Nascimento EH, Pontual ML, Pontual AA, et al. Association between Odontogenic Conditions and Maxillary Sinus Disease: A Study Using Cone-beam Computed Tomography. J Endod 2016;42:1509-15.
31. Curi FR, Pelegrine RA, Nascimento M, et al. Odontogenic infection as a predisposing factor for pathologic disorder development in maxillary sinus. Oral Dis 2020;26:1727-35.
32. Estrela C, Bueno MR, Estrela M, et al. Frequency and Risk Factors of Maxillary Sinusitis of Endodontic Origin Evaluated by a Dynamic Navigation and a New Filter of Cone-Beam Computed Tomography. J Endod 2022;48:1263-72.
34. Cao Z, Yuan J. Changes in Maxillary Sinus Mucosal Thickening following the Extraction of Teeth with Advanced Periodontal Disease: A Retrospective Study Using Cone-Beam Computed Tomography. Biomed Res Int 2021;2021:6688634.
35. Bisla S, Gupta A, Singh H, et al. Evaluation of relationship between odontogenic infections and maxillary sinus changes: A Cone Beam Computed Tomography-based study. J Oral Biol Craniofac Res 2022;12:645-50.
39. Wehrbein H, Diedrich P. [The initial morphological state in the basally pneumatized maxillary sinus--a radiological-histological study in man]. Fortschr Kieferorthop 1992;53:254-62.

References in responses to reviewer:

Abdulghani, E. A., Al-Sosowa, A. A., Alhammadi, M. S., Al-Fakeh, H., Al-Gumaei, W. S., Almashraqi, A. A.,... Cao, B. (2022). Three-dimensional assessment of the favorability of maxillary posterior teeth intrusion in different skeletal classes limited by the vertical relationship with the maxillary sinus floor. [Journal Article]. *Head Face Med*, 18(1), 13. doi: 10.1186/s13005-022-00316-3

Aksoy, U., & Orhan, K. (2019). Association between odontogenic conditions and maxillary sinus mucosal thickening: a retrospective CBCT study. [Journal Article]. *Clin Oral Investig*, 23(1), 123-131. doi: 10.1007/s00784-018-2418-x

Block, M. S., & Dastoury, K. (2014). Prevalence of sinus membrane thickening and association with unhealthy teeth: a retrospective review of 831 consecutive

patients with 1,662 cone-beam scans. [Journal Article; Review]. *J Oral Maxillofac Surg*, 72(12), 2454-2460. doi: 10.1016/j.joms.2014.06.442

Cao, Z., & Yuan, J. (2021). Changes in Maxillary Sinus Mucosal Thickening following the Extraction of Teeth with Advanced Periodontal Disease: A Retrospective Study Using Cone-Beam Computed Tomography. [Journal Article]. *Biomed Res Int*, 2021, 6688634. doi: 10.1155/2021/6688634

Kuligowski, P., Jaron, A., Preuss, O., Gabrysz-Trybek, E., Bladowska, J.,... Trybek, G. (2021). Association between Odontogenic and Maxillary Sinus Conditions: A Retrospective Cone-Beam Computed Tomographic Study. [Journal Article]. *J Clin Med*, 10(13). doi: 10.3390/jcm10132849

Tian, X. M., Qian, L., Xin, X. Z., Wei, B., & Gong, Y. (2016). An Analysis of the Proximity of Maxillary Posterior Teeth to the Maxillary Sinus Using Cone-beam Computed Tomography. [Journal Article; Research Support, Non-U.S. Gov't]. *J Endod*, 42(3), 371-377. doi: 10.1016/j.joen.2015.10.017

Wehrbein, H., & Diedrich, P. (1992). [The initial morphological state in the basally pneumatized maxillary sinus--a radiological-histological study in man]. [Journal Article]. *Fortschr Kieferorthop*, 53(5), 254-262. doi: 10.1007/BF02325074

White, S. C., & Pharoah, M. J. (2014). *Oral Radiology: Principles and Interpretation* (7th editioned.). St. Louis: Mosby Co.