



Incidental Findings in Cone Beam Computed Tomography Images during Prosthodontic Evaluation: Characteristics of Head and Neck Atheromas

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Objectives

- Atheromas are vascular lesions that can be incidentally detected in cone beam computed topography (CBCT) images during prosthodontic planning.
- This study aims to assess prevalence, distribution, and risk factors associated with head and neck atheromas

Materials and Methods

- Full-volume CBCT images of adult patients (n=458) were evaluated and data was divided into 4 groups:
- Subjects with no atheroma, subjects with intracranial atheroma (ICA), subjects with extracranial atheroma (ECA), and subjects exhibiting both ICA and ECA
- Age, sex, medical conditions/medications, family history, atheroma location, and size were documented.
- Between-group comparisons for measured data were conducted using Analysis of Variance (ANOVA) and Tukey’s highly significance difference test. Chi-Square test was used for categorical data.

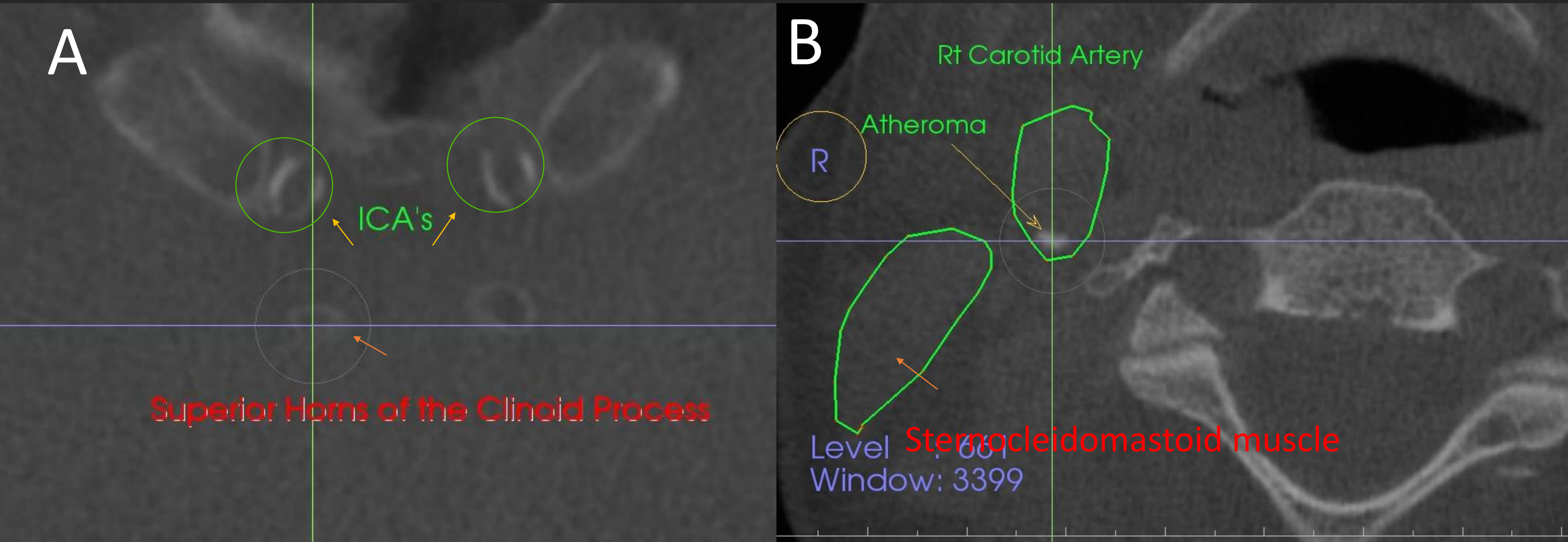


Figure 1 : Examples of atheroma. A: Intracranial atheroma(ICA) ,B: Extracranial atheroma (ECA).

Results

Parameter	Intracranial Atheroma (n=47)	Extracranial Atheroma (n=59)	Intracranial and Extracranial atheroma (n=31)	No Atheroma (n=321)	Total (n=458)	p-value
Age (years), mean (SD)	65.3(9.3)	64.7(10.1)	69.2(7.6)	55.8(13.4)	58.8(13.2)	0.0040
Males, n (%)	21(44.7)	36(61)	21(67.7)	152(47.4)	230(50.2)	0.0420
Females, n (%)	26(55.3)	23(39)	10(32.3)	169(52.65)	228(49.8)	
Ethnicity, n (%)						0.990
Unknown	24(51.1)	31(52.5)	17(54.8)	168(52.3)	240(52.4)	
Caucasian	15(31.9)	16(27.1)	10(32.3)	71(22.1)	112(24.5)	
Hispanic	1(2.13)	1(1.69)	0	9(2.8)	11(2.4)	
African American	5(10.6)	9(15.3)	3(9.7)	55(17.1)	72(15.7)	
Asian	2(4.3)	2(3.4)	1(3.2)	16(4.98)	21(4.6)	
Native American	0	0	0	1(0.31)	1(0.2)	
Pacific Islander	0	0	0	1(0.31)	1(0.2)	
Alcohol abuse, n (%)	2(4.3)	2(3.4)	0	9(2.8)	13(2.8)	0.726
Smoking, n (%)	11(23.4)	12(20.3)	9(29)	58(18.1)	90(19.7)	0.445
Endocrine Diseases, n (%)						
Diabetes	3(6.4)	8(13.6)	8(25.8)	39(12.2)	58(12.7)	0.084
Hypothyroidism	4(8.5)	4(6.8)	5(16.1)	31(9.7)	4(0.9)	0.779
Hyperthyroidism	0	1(1.7)	0	3(0.9)	44(9.6)	
Cardiovascular Diseases, n (%)						
Hyperlipidemia	17(36.2)	29(49.2)	18(58.1)	79(24.6)	143(31.2)	<0.001
Hypertension	22(46.8)	29(49.2)	23(74.2)	103(32.1)	177(38.7)	<0.001
MI/CAD	5(10.6)	5(8.5)	6(19.4)	5(1.6)	21(4.6)	<0.001
PAD	1(2.1)	1(1.7)	0	0	2(0.4)	0.079
CVA	4(8.5)	4(6.8)	0	8(2.5)	16(3.5)	0.058

Table 1: Patient’s baseline characteristics and demographics, Incidence of ICA , ECA , both ICA and ECA , and no atheroma by endocrine and Cardiovascular diseases

Parameter	Intracranial Atheroma (n=47)	Extracranial Atheroma (n=59)	Intracranial and Extracranial atheroma (n=31)	No Atheroma (n=321)	Total (n=458)	p-value
Chronic kidney disease, n (%)	1(2.1)	2(3.4)	1(3.2)	3(0.9)	7(1.5)	0.421
Respiratory Diseases, n (%)						
COPD	2(4.3)	2(3.4)	2(6.5)	9(2.8)	15(3.3)	0.716
Asthma	5(10.6)	6(10.2)	4(12.9)	33(10.3)	48(10.5)	0.975
Sleep apnea	2(4.3)	4(6.8)	0	23(7.2)	29(6.3)	0.418
Malignancy, n (%)	6(12.8)	10(17.0)	5(16.1)	28(8.7)	49(10.7)	0.18
Depression, n (%)	8(17)	9(15.3)	5(16.1)	45(14)	67(14.6)	0.943
Medications, n (%)						
Anti-platelet agents	6(12.8)	15(25.4)	17(54.8)	39(12.2)	77(16.8)	<0.001
Anticoagulants	4(8.5)	2(3.4)	3(9.7)	8(2.5)	17(3.7)	0.058
Antihypertensives	22(46.8)	29(49.2)	22(71)	98(30.5)	171(37.3)	<0.001
Oral hypoglycemic agents	3(6.4)	7(11.9)	8(25.8)	28(8.7)	46(10)	0.018
Insulin use	1(2.1)	2(3.4)	0	8(2.5)	11(2.4)	0.793
Statins	13(27.7)	22(37.3)	15(48.4)	61(19)	111(24.2)	<0.001
Family history, n (%)						
Family history of diabetes	12(25.5)	6(10.2)	7(22.6)	33(10.3)	58(12.7)	0.008
Family history of atherosclerotic arterial disease	16(34)	15(25.4)	7(22.6)	52(16.2)	90(19.7)	0.019

Table 2 : Incidence of ICA , ECA , both ICA and ECA , and no atheroma by chronic kidney diseases, malignancy , medications , and family history of comorbidities

Conclusion

Incidentally detected atheromas are common. Subjects exhibiting both ICA and ECA are at higher risk for cardiovascular disease , and this may warrant early referral to medical specialists

Disclosures

No disclosures