

## Research Article

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# Incidental findings in dental radiology are concerning for family doctors

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**Abstract:** Cone Beam Computerized Tomography (CBCT) is an imaging technology increasingly used in dentistry. Depending on the size of the examination area, visualization of anatomical structures outside the indication area may reveal incidental findings (IF). The aims of this systematic review and meta-analysis were to 1) evaluate the frequency, location and different types of incidental findings (IF) revealed during CBCT examinations; 2) identify potential influencing factors such as gender or age; 3) highlight what the family doctor should know about CBCT and the benefits for medical care.

70 retrospective studies were included. 60% of IF are in the naso-oropharyngeal airway and paranasal sinuses. Carotid calcifications were observed with a mean prevalence of 9% CI95% [2-21]). Meta-regression showed a significant association of this prevalence with age, irrespective of gender.

Given the high frequency of IF, with varying severity, the whole medical community is fully involved, and its opinion should be sought to ensure the best possible management for the patients. Physicians may also require CBCT examinations that would have been previously prescribed by a dentist, that may serve to better orientate investigations toward another imaging technique. The family doctor is therefore the dentist's main interlocutor and the main coordinator of the follow-up of IF.

**Keywords:** Incidental Findings; Cone-Beam Computed Tomography; Diseases; Review, Systematic

**Abbreviations:** CAC: Carotid Artery Calcifications; CBCT: Cone Beam Computed Tomography; FOV: Field Of View; IF: Incidental Finding; OMFR: Oral and Maxillo-Facial Radiologist; MSCT: Medical multi-Slice Computed Tomography

## 1 Introduction

The extraordinary growth of radiology has benefitted dentistry [1], more particularly with the advent of Cone Beam Computed Tomography (CBCT). Its use has grown massively in dental care over recent years in Europe [2], with indications including implantology, dentomaxillofacial surgery, endodontics, periodontics, obstructive sleep apnea and orthodontics [3, 4]. The clinical applications of CBCT imaging in the preoperative assessment of impacted teeth, orthodontics or implantology each accounted for about 15% of published papers [5]. In clinical practice, CBCT examination for implant planning seems to be the most common reason for referral to radiological centers. The growth trend followed an exponential curve [6].

There are two excellent reasons why physicians stand to gain by looking more closely at this imaging modality. First, which CBCT examinations of anatomical structures can be useful to physicians and dental practitioners? Currently, applications extend to the base of the skull and the

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face as a whole, so depend on the size of the acquisition or field of view (FOV). The potentially viewable structures in a large FOV are presented in Table 1. Compared with traditional medical multi-slice computed tomography (MSCT), CBCT uses much lower radiation doses, is less costly, has higher resolution, and produces more detailed images of hard tissues, although it provides less soft tissue contrast [7, 8]. CBCT imaging could eventually replace conventional MSCT for some tasks such as otolaryngology-related applications, temporal bone assessment or analysis of the upper airway for obstructive sleep apnea [9].

The second reason concerns incidental findings; as CBCT resolution improves and its use increases, occult pathologies, unrelated to the original diagnostic query, are being detected more and more frequently. The likelihood of such incidental finding increases with the head volume included in the scan [10]. Their nature and frequency can nevertheless vary widely [11]. Most are extragnathic findings, occurring outside the region of interest and thus highlighting the necessity to inspect the whole image with attention, with the possibility of a second reading by an appropriate professional radiologist for review of large FOV [11, 12]. The family doctors and other physicians are particularly involved in taking charge of patients once the incidental finding has been made. Although the image is interpreted by a physician or dentist specialized in radiology (OMFR) [4], the care the patient subsequently receives is not based solely on this diagnosis. Further investigations with medical referrals are often warranted [13]. This is not a question of exaggerated multiplication of examinations but of orientation to ensure the best care for the patient. The CBCT is therefore an integral part of the therapeutic arsenal that all medical community should know.

Several articles reported incidental findings in CBCT scans, although focusing on specific populations, FOVs or regions of interest [14]. A recent umbrella review in medical imaging has drawn attention to the high prevalence of incidental imaging findings and the need for precise guidelines about its management [15]. CBCT exams were not included in this study [16]. However, there is a need to have a more comprehensive overview of the available evidence, to provide both clinicians and policy makers with robust data that could form the basis of care guidelines edited by panels of experts in radiology.

The aims of this systematic review and meta-analysis were to 1) evaluate the frequency, location and different types of incidental findings (IF) revealed during CBCT examinations; 2) identify potential influencing factors such as gender or age; 3) highlight what the family doctor should know about CBCT and the benefits for medical care.

## 2 Methods

### 2.1 Data sources and searches

We followed the PRISMA statement. The following databases were searched: Ovid MEDLINE In-Process and Other Non-Indexed Citations via Ovid SP and MEDLINE via Pubmed (1966 to present); LILACS via the Virtual Health Library search form (1982 to present); the Web of Science® via Thomson Reuters (1900 to present). Reference lists of query studies were inspected to identify any additional relevant published or unpublished data. Google Scholar was also queried to identify additional references. We sought out unpublished and on-going trials by searching the World Health Organization International Clinical Trials Registry Platform, ICTRP. There was no restriction on language of publication.

We employed an iterative search strategy in order to adopt a systematic approach. This two-step process took shape as the process evolved (final search strategy detailed in Supplemental Text). The last search was conducted on 2019/04/09.

### 2.2 Study selection

Two review authors (PM, AG) assessed the titles and available abstracts of all studies identified by the initial search and excluded any clearly irrelevant studies. Two review authors (PM, DM) independently assessed full paper copies of reports of potentially eligible studies using the inclusion criteria.

### 2.3 Inclusion criteria

All studies dealing with incidental or abnormal findings in CBCT examinations were considered to be eligible. Results of studies were not included if findings were directly related to the reasons CBCT examinations were indicated (e.g. sinus mucosal thickening or ostial obstruction for suspected sinusitis). Dento-alveolar incidental findings were not considered in this systematic review. There was no restriction concerning the size of the CBCT field of view.

**Table 1:** List of bone structures and spaces of head and neck in CBCT imaging (depending on field of view size)

<b>Naso-oropharyngeal airway</b>	<b>Skull base</b>
Sinus ethmoid	<b>Anterior</b>
Inferior, middle, superior meatus	Frontal bone
Cavum, pharyngeal tonsils, Rosenmuller dimple	Ethmoid bone and cribriform plate
Palatine tonsilles	Concha – middle and superior nasal
Glosso-epiglottic furrow	Sphenoid bone - wing (lesser)
<b>Paranasal sinuses</b>	Canal – optic
Sinus maxillary	<b>Middle</b>
Sinus frontal	Sphenoid bone - body and wing (greater)
Sinus sphenoid	Fossa – hypophyseal
<b>Temporomandibular joint</b>	Temporal bone - petrous part
Temporal fossa and articular tubercula	Fissure - inferior and superior orbital
Mandibular condyle	Foramen rotundum, ovale, lacerum, spinosus
Articular space	<b>Posterior</b>
<b>Cervical vertebrae region</b>	Clivus
Atlas with arches (anterior and posterior)	Occipital bone, condyle, protuberance (external)
Axis with dens (odontoid process)	Temporal bone - styloid process
Cervical vertebrae	Canal – carotid
<b>Outer, middle and internal ear</b>	Foramen - jugular, magnum, stylomastoid
Auditory meatus (external)	<b>Calvarial</b>
Malleus, Stapes, Incus	Temporal bone – shell
Cochlea	Parietal bone
Semicircular canals	Suture – coronal, sagittal, lambdoid
Temporal bone - mastoid process	Bregma, Lambda, Pterion
Auditory meatus (internal)	<b>Face skeleton</b>
<b>Focal calcifications</b>	Mandible, foramen mandibular and mental
Tonsils	Maxilla
Lymph node	Hyoid bone
Sinusal	Nasal bone
Arterial (e.g. facial vessels, internal carotid)	Vomer
Salivary glands	Piriform aperture (anterior nasal aperture)
Pineal gland	Zygomatic bone
Hypophysis	Palatine bone
Falx cerebri	Concha – inferior nasal
Stylohyoid, stylomandibular ligament	Lacrimal bone

## 2.4 Data extraction

From article full-texts we extracted: 1) the indication of CBCT and the place of the examination; 2) information about the study population (number of examinations, mean age, gender); 3) information on the kind of CBCT apparatus (brand, field of view), the physical constants (kV, mAs); 4) details about the type of incidental findings and their prevalence; 5) information about how the CBCT images were read and interpreted (responsibility, blinding or calibration); 6) how incidental findings and patients were managed or planned to be managed (follow-up). For each article, we also categorized the searched anatomical regions into naso-oropharyngeal airway and paranasal sinuses, temporomandibular joint, cervical vertebrae, ear, skull base, calvaria, face skeleton and focal calcifications. The authors were not contacted.

## 2.5 Data synthesis and analysis

In order to provide a pooled estimate of the prevalence, we performed random-effects meta-analyses. Meta-analyses were carried out on the double arc cosine transformed proportions, using the inverse of the variance of the transformed proportion as the study weight. The pooled transformed proportions along with their confidence interval were back transformed to a proportion. A meta-regression was performed to determine a potential effect of the mean age and gender of patients on a prevalence increase of incidental findings. Statistics and plots were generated using R version 2.15.0 (libraries meta 4.3-2 and metaphor 1.9-8).

## 3 Results

Among the 5535 records identified, 70 were unique retrospective studies. Details of the selection process are given in Fig. S1.

### 3.1 Description of the retrospective studies

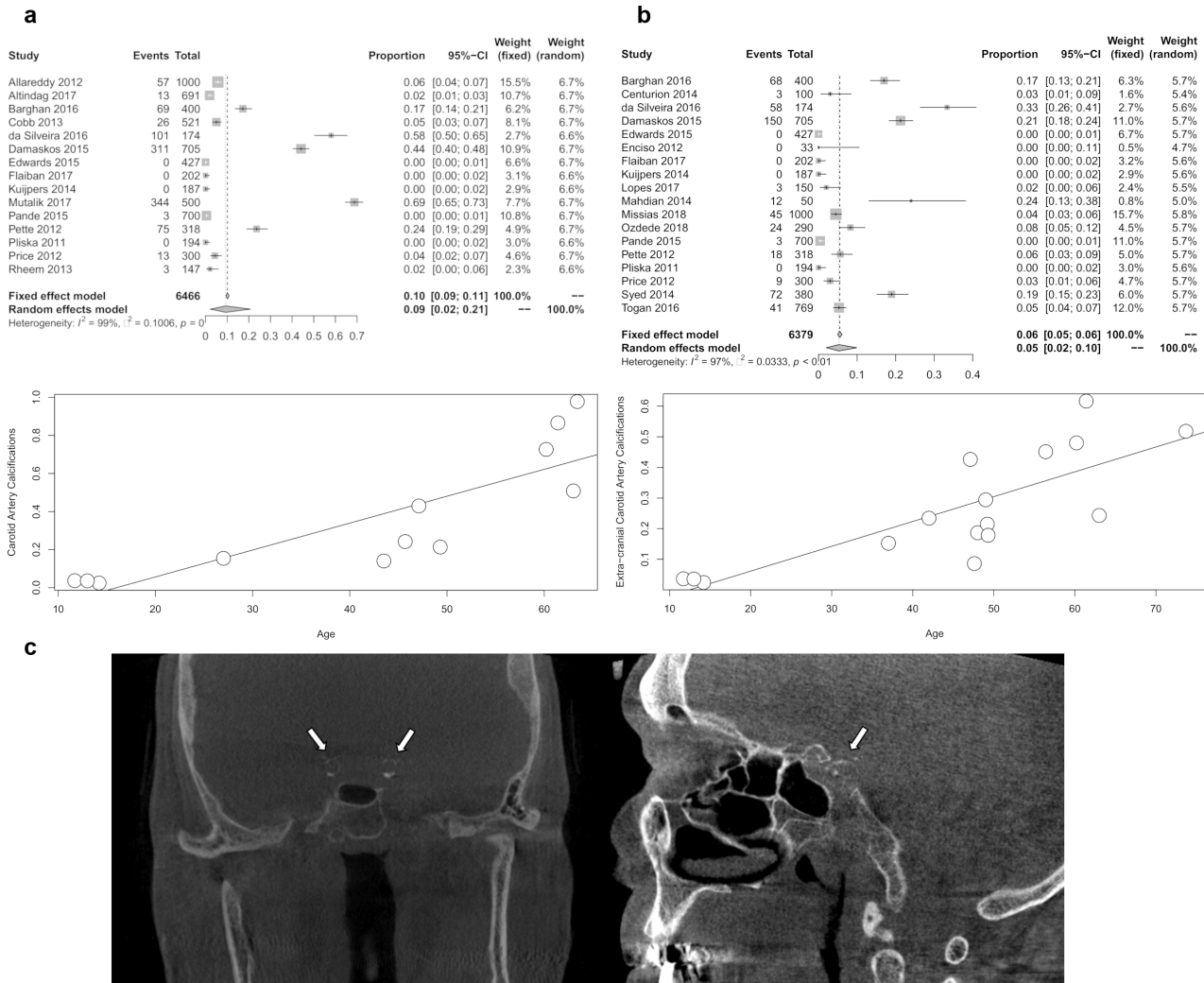
Of the 70 retrospective studies (Table 2), 19 were carried out in the USA (27%), 12 Brazil (17%) and 10 Turkey (14%). According to the region of interest explored (ROI) and included within the FOV, 60% of studies concerned the naso-oropharyngeal airway and paranasal sinuses. This category includes several types of abnormalities such as

ethmoidal and maxillary sinus (e.g. sinusitis, mucosal thickening), nasal findings (e.g. septum deviated, concha bullosa, turbinate hypertrophy), tonsil findings (e.g. hypertrophy), airway narrowing/obstruction or soft palate and tongue findings (e.g. elongated epiglottis or soft palate, tongue hypertrophic). Airway narrowing/obstruction was reported in 5 studies, ranging from 0.5% to 52% of incidental findings [17-21]. Temporomandibular joints, cervical vertebrae, ear, and skull base were explored in 36%, 27%, 19% and 33%, respectively. Focal calcifications were explored in 33 (47%) of studies. Consequently, we had enough data to perform meta-analyses on reported carotid artery, stylohyoid/stylomandibular ligament, tonsilloliths, pineal gland calcifications, *Posterior ponticle*, malignancies and abnormalities of the *sella turcica*.

Table S1 provides details, for each retrospective study, about indications of examinations, population, radiological apparatus, type of incidental findings (proportion of findings by ROI), how the CBCT was read and how the incidental findings were managed. The two most commonly used types of CBCT apparatus were the i-CAT (Imaging Sciences International, Hatfield, USA) and NewTom® (Verona, Italy) families, with 25 and 16 studies, respectively. Oral and Maxillo-Facial radiologists (OMFR) were reported to have examined the dataset in more than 45 studies. About a third of studies reported information about follow-up of patients, or the need to do it; in particular, some studies focused on incidental findings that required referral [17, 22-31]. Of the 6 studies clearly reporting suspected malignancies of skull base and abnormalities on the *sella turcica* [17, 20, 22, 23, 32, 33], none provided details about patient follow-up, such as diagnostic, prognostic, or histological findings or short- or long-term assessments. Table S1 shows a high prevalence of incidental findings whatever the FOV and the ROI, potentially concerning several medical specialties.

### 3.2 Meta-analyses on prevalence data

We identified 33 studies (47%) dealing with focal calcification discoveries. Proportions of Carotid Artery Calcifications (CAC) were identifiable in 23 studies and referred for an examination of the CBCT volume in the intra and/or extracranial part of the carotid artery. Using a random effect meta-analysis, the overall proportion of CAC with 95% confidence interval (CI) was estimated at 0.09 CI95% [0.02;0.21]. Proportions of extra-cranial CAC (ECAC) were identified in 18 studies, of which 10 were common with those of CAC. The overall proportion was estimated at 0.05 CI95% [0.02;0.10]. The forest plot in Fig. 1a and Fig.



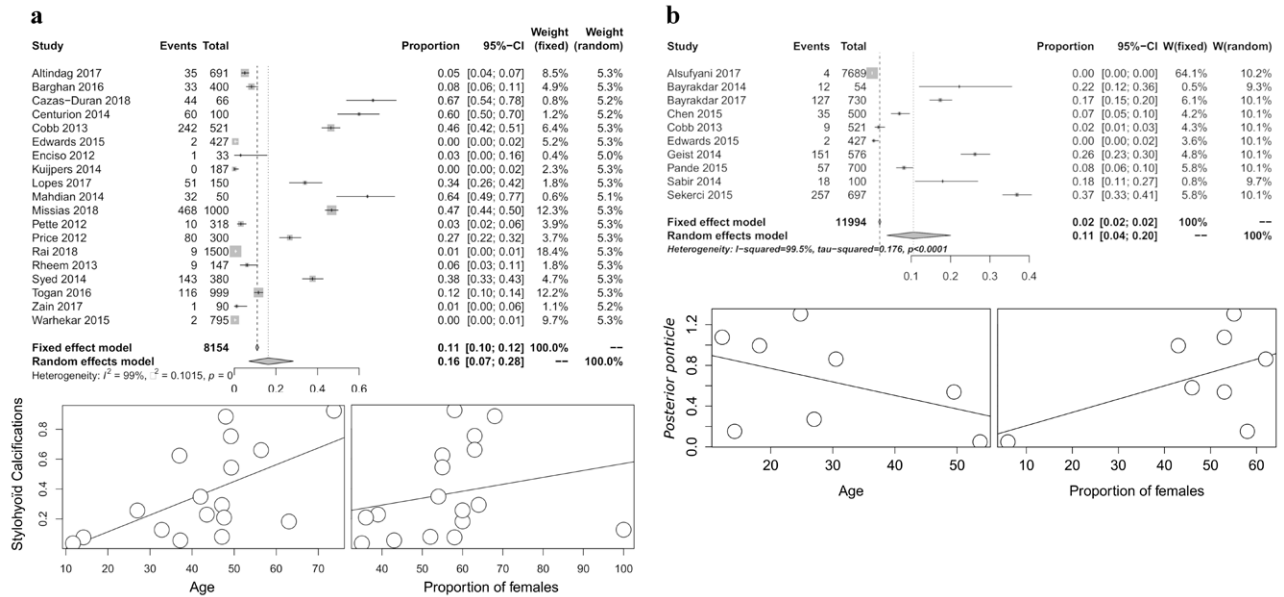
**Figure 1:** Meta-analysis on prevalence data about carotid calcifications according to their localization.

**Part a, upper.** Forest plot of the meta-analysis on prevalence data (see Supplemental Information). An event was defined as the presence of at least one carotid calcification when data are available for both extra and intracranial. The mean fixed and random model global prevalence are provided, together with heterogeneity. **Part a, lower.** Meta-regression plot of the linear relationship between the prevalence of carotid calcifications and the mean age of patients. **Part b, upper.** Forest plot of the meta-analysis on prevalence data (see Supplemental Information). An event was defined as the presence of at least one extracranial carotid calcification. **Part b, lower.** Meta-regression plot of the linear relationship between the prevalence of extracranial carotid calcifications and the mean age of patients. **Part c.** Carotid artery calcifications (white arrows) discovered incidentally in the supra-cavernous section of the internal carotid artery of a 60-year-old man. The patient was referred to his family doctor.

1b (upper parts) revealed a great heterogeneity among studies, as statistically confirmed by an I2 value greater than 97%,  $p < 0.01$ . So, there is a need to look for factors that can explain such heterogeneity. In both cases, meta-regression demonstrated that CAC and ECAC were significantly associated with mean age (0.014 CI95% [0.008; 0.02] and 0.008 CI95% [0.005; 0.012], respectively), independently of the proportion of females (0.001 CI95% [-0.013; 0.015] and 0.001 CI95% [-0.006; 0.007], respectively). Fig. 1a and Fig. 1b (lower parts) illustrate the

positive relationship that was inferred between age and proportion of calcification discoveries.

Proportions of Stylohyoid Ligament Calcifications (SLC) were identified in 19 studies (Fig. 2a, upper part); the overall proportion was estimated at 0.16 CI95% [0.07; 0.28]. The mean age but not proportion of females was positively and independently associated with SLC (0.011 CI95% [0.003; 0.019] and 0.005 CI95% [-0.005; 0.015], respectively). Fig. 2a (lower part) illustrates the positive relationship that was inferred between age, gender and the



**Figure 2:** Meta-analysis on prevalence data about stylohyoid ligament calcifications (SHL) and Posterior ponticle (PP). **Part a, upper.** Forest plot of the meta-analysis on prevalence data. An event was defined as the presence of at least one SHL calcification. The mean fixed and random model global prevalence is provided, together with heterogeneity. **Part a, lower.** Meta-regression plot of the linear relationship between the prevalence of SHL calcifications, the mean age of patients (significant) and the proportion of females (not significant). **Part b, upper.** Forest plot of the meta-analysis on prevalence data. An event was defined as the presence of at least one PP, partial or complete. **Part b, lower.** Meta-regression plot demonstrated no linear relationship with the mean age of patients and proportion of females.

proportion of SLC discoveries. The overall proportion for Posterior ponticle from 10 studies (Fig. 2b) was estimated at 0.11 CI95% [0.04;0.20]. Although considerable heterogeneity ( $I^2=99.5%$ ,  $p<0.001$ ) was found, no significant effect emerged for age and gender.

Pineal gland and tonsil calcifications exhibited similar overall proportions, estimated at 0.12 CI95% [0.04; 0.22] and 0.074 CI95% [0.03; 0.13], respectively. In both cases, age significantly increased the prevalence of these calcifications, independently of gender. Arising from 14 and 11 studies, the pooled estimates for suspected malignancies and abnormalities on the *sella turcica* were estimated at 0.003 CI95% [0.002; 0.006] and 0.002 CI95% [0.001; 0.005], respectively.

## 4 Discussion

In this systematic review, the 70 identified retrospective studies reported a high prevalence of incidental findings whatever the regions of interest, FOVs or populations (Table 2), potentially concerning several medical specialties, reasons for consultation or histories.

### 4.1 Incidental findings in CBCT are a source of concern for the entire medical community

60% of studies concerned the naso-oropharyngeal airway and paranasal sinuses (Table 2). CBCT may be used to explore qualitatively and quantitatively the upper pharyngeal airway. It is an accurate tool for airway evaluation and measurements (i.e. total volume airway or nasopharyngeal minimum cross-sectional area) can be used as indicators of the presence and severity of obstructive sleep apnea [34]. It can help to identify risk factors and/or to predict treatment outcomes (e.g. discovery of restrictions of the aeropharyngeal sector, adenotonsillar hypertrophy, deviated nasal septum, turbinate hypertrophy). The presence of the cervical vertebrae or temporo-mandibular joints may give indications about osteoarthritic changes. It is noteworthy that few incidental findings indicated high severity such as malignancies of skull base, abnormal radiological signs on the *sella turcica* or the clivus, or severely calcified carotid artery.

Thus, depending on location and the urgency to address for referral (Table 1, Table 2), several medical specialties may be involved, e.g. orthodontists, dentists, internists, endocrinologists, angiologists, neurologists,

**Table 2:** Description of the retrospective studies included.

The number and proportions of studies are given according to their year of publication, the region of interest explored, and some particular abnormalities reported by the authors.

	Number of studies (%)
<b>Country</b>	70 (100%)
Brazil	12 (17%)
China	2 (3%)
Denmark	1 (1.5%)
Germany	1 (1.5%)
Greece	1 (1.5%)
India	5 (7%)
Iran	7 (10%)
Italy	2 (3%)
Korea	1 (1.5%)
Kenya	1 (1.5%)
Netherlands	1 (1.5%)
Taiwan	1 (1.5%)
Turkey	10 (14%)
United Kingdom	3 (4%)
USA	19 (27%)
Saudi Arabia	2 (3%)
Switzerland	1 (1.5%)
<b>Year</b>	70 (100%)
2007	1 (1.5%)
2010	1 (1.5%)
2011	4 (5%)
2012	8 (11%)
2013	6 (9%)
2014	14 (20%)
2015	9 (13%)
2016	6 (9%)
2017	14 (20%)
2018	7 (10%)

rheumatologists, otolaryngologists, general practitioners/family doctors or oral surgeons.

Particularly, we identified 47% of studies dealing with focal calcification discoveries (Table 2). Proportions of CAC were identifiable in 23 studies in the intra and/or extracranial part of the carotid artery (Table 2), with a positive relationship inferred between age and proportion of calcification discoveries (Fig. 1). The presence of CAC

**Table 2 continued:** Description of the retrospective studies included.

	Number of studies (%)
<b>Region of Interest (ROI)</b>	70 (100%)
Naso-oro-pharyngeal airway and paranasal sinuses	42 (60%)
Temporomandibular joint	25 (36%)
Cervical vertebrae region	19 (27%)
Ear	13 (19%)
Skull base	23 (33%)
Calvarial	10 (14%)
Face skeleton	28 (40%)
Focal calcifications	33 (47%)
<b>Particular abnormalities</b>	
Suspected malignancy of skull base	14 (20%)
Abnormality on <i>sella turcica</i>	11 (16%)
Stylohyoid Ligament calcification	19 (27%)
Intracranial Carotid Artery Calcifications (ICAC)	10 (14%)
Extracranial Carotid Artery Calcifications (ECAC)	18 (26%)
Pineal gland	15 (21%)
Tonsilloliths	20 (29%)
<i>Posterior ponticle</i>	10 (14%)

has been associated with a significantly increased risk of adverse cardiovascular outcomes such as myocardial infarction, ischemic stroke or vascular death [35, 36]. Calcifications may be responsible for stenosis, forming parts of deeper and mature plaques [37]. They are thus a specific marker of the vulnerability and extent of atherosclerotic lesions in other vascular beds [36]. The prevalence of CAC was found to be higher in populations with systemic medical risk factors including type 2 diabetes, metabolic syndrome, obstructive sleep apnea syndrome or postmenopausal women [38, 39]. Other risk factors such as age, smoking history, total cholesterol level, and hypertension should also be included in the overall risk assessment [37]. Fig. 1c shows the presence of bilateral calcifications of the internal carotid arteries. The calcifications are in the cavernous sinus. These calcifications, in the tunica media, suggest that the patient may be diabetic, either uncontrolled or undiagnosed.

Regarding other focal calcifications (Table 2), they can be considered as degenerative changes related to age and are not problematic as such. Nevertheless, they may also constitute markers of increased risk in patients or explain some clinical signs that were not necessarily the reason for consultation (e.g. migraines). Pineal gland calcifications have been associated as a risk factor for symptomatic intracerebral hemorrhage or cerebral infarction [40] and also infectious, cancer or degenerative diseases, possibly linked to diminished melatonin production [41]. *Posterior ponticle*, a bony ossicle occurring on the atlas vertebra, has been reported to be associated with headache and unexplained cervical pain or vertigo. A careful check should also be made for its presence before screw placement by surgeons [42]. Tonsilloliths may develop from a reactive foreign nidus such as organic debris or bacteria within a tonsillar crypt. The concretions have been associated with halitosis and tonsillar abscess [43]. An elongated stylohyoid complex has been associated with symptoms caused by compression of nerves, compression of carotid artery or tendinitis, such as cervicofacial and throat pain, or dysphagia [44].

During the screening of articles, we also identified case reports (Table S2) with worrying findings: mixed-density signal in the greater wing of the sphenoid [45], intracranial arachnoid cyst referred to the neurosurgical department [46], non-Hodgkin lymphoma [47], benign notochordal cell tumor or partially empty and enlarged *sella turcica* with possible disruption of the posterior wall [48], potential calcified meningioma or schwannoma observed in the middle cranial fossa [49], pituitary adenoma [50], lesions discovered on the clivus/basisphenoid [51-53] and severe stenoses of the internal carotid artery [37]. Further examination by magnetic resonance imaging was generally required.

## 4.2 The need to share CBCT examinations between physicians and dentists

It is fundamental that the CBCT volume be read in full, in an effort to review it with a systematic approach [2]. For this reason, guidelines recommend that volumes should be checked by a specialist radiologist [4] so that the level of significance of the findings can be determined, and whether there is a need for referral to a family doctor and/or a medical specialist [54]. Conversely, physicians may require radiologic examinations that would have been previously prescribed by a dentist (CBCT). Such examinations could be sufficient in themselves or may serve to

better orientate investigations toward another imaging technique (e.g. MSCT, MRI, ultrasonography). It should not be forgotten that exposing the patient to the smallest possible amount of radiation is also one of the major concerns in both medical and dental imaging, particularly for adolescents and children, who are much more sensitive to radiation exposure [55]. While the risk is low at the individual scale for CBCT, far below that of MSCT, when multiplied by the increasingly large population of patients exposed to diagnostic imaging, it becomes a significant public health concern [7, 56, 57]. Family doctors are strategic regarding prevention of radiation risks [58].

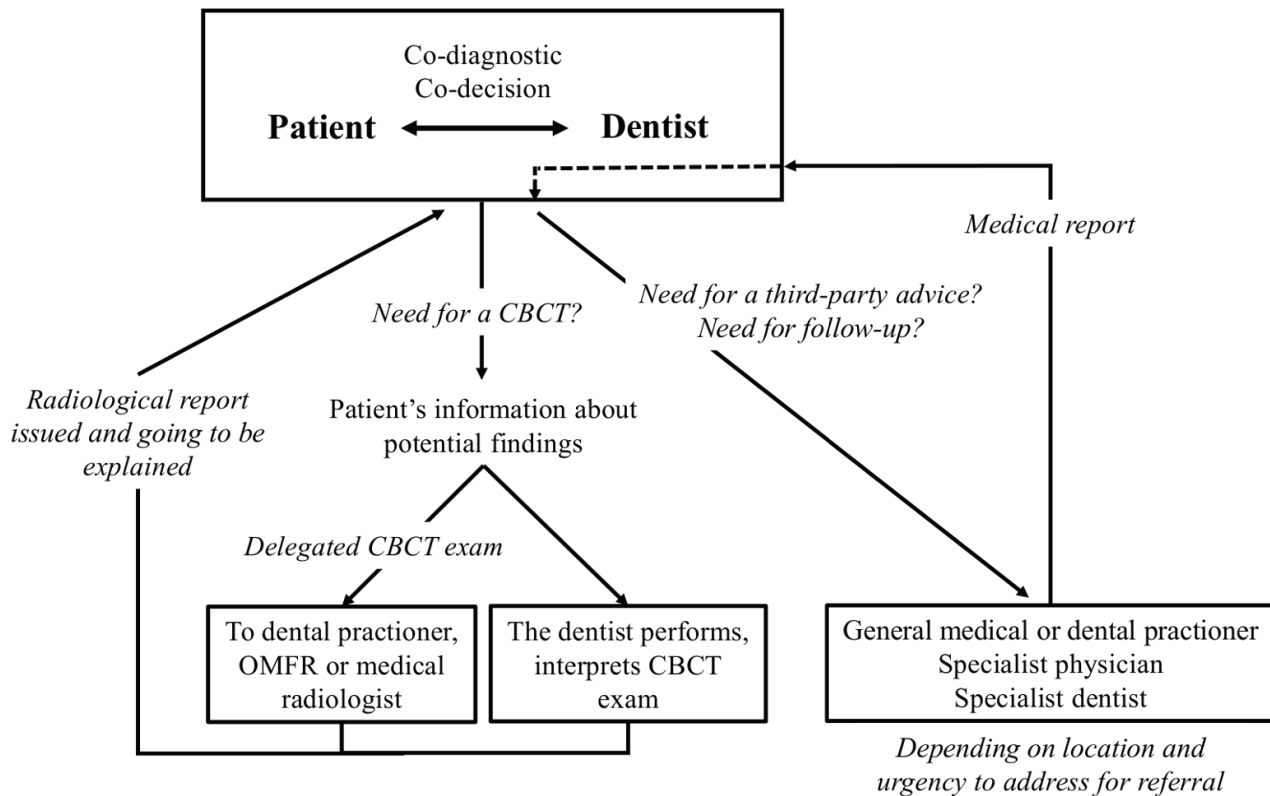
## 4.3 The family doctor, follow-up coordinator

Given the high prevalence of IF, dentists should describe the possibility of these incidental discoveries in their consent forms and during information of patients. It is necessary to make it a routine in daily clinical practice the reporting of these IF in the clinical files [59]. Establishing a standardized course of action when an IF is discovered is nevertheless impossible and unwanted. Decision-making is evidence-based; in other words, it is based on a practitioner's expertise supported by the available clinical evidence and underpinned by the patient's needs and preferences [60]. However, a frame of general guidelines is lacking. We strongly recommend that the family doctor be the coordinator of follow-up [58] (Fig. 3).

The physicians should be also aware of the cost to society of the intervention as well as the anxiety that pathologies and incidentalomas can produce in patients [61, 62]. Additional testing following discovery of an incidentaloma may thus induce a cascade effects of events, increasing the risk of false positive results [63].

The question of what should be done in case of such findings outside the primary region of interest is one that every physician is likely to face during his or her professional career. At a time when it is accepted that patients must be fully informed [58], it is our duty to tell them about an incidental/occult pathology [62]. The high frequency of incidental findings, with very low rates of malignancies and high rates of false-positives, the potential emotional cost for the patients and their relatives and the financial cost for society of IF monitoring, necessitate a real discussion with the patient before performing a middle or large field CBCT [64]. We therefore agree with Powel et al. that it would be appropriate to consider replacing the word "incidental findings" with "followable findings" [62].





**Figure 3:** A general framework for the CBCT in oral medicine according to patient-centered care principles.

The model highlights the need for shared decision making between the patient and dentist. The patient should be an integral part of care pathway, from acceptance of the possibility of incidental discovery before the CBCT exam to its management and follow-up.

## 5 Conclusion

The use of CBCT has grown exponentially in dental care. Given the frequency of incidental findings, with varying severity, the whole medical community is fully involved, and its opinion should be sought to ensure the best possible management for the patients.

The question of what should be done in case of such findings outside the primary region of interest is one that every physician is likely to face during her or his professional career. At a time when it is accepted that patients must be fully informed, it is our duty to tell them about an incidental/occult pathology. The high frequency of incidental findings, with very low rates of malignancies and high rates of false-positives, the potential emotional cost for the patients and their relatives and the financial cost for society of IF monitoring, necessitate a real discussion with the patient. Patients should be clearly informed that the entire volume will be reviewed in full using a systematic approach, and that all findings will be recorded in the patient's record and explained to the patient.

Physicians may also require CBCT examinations that would have been previously prescribed by a dentist that may serve to better orientate investigations toward another imaging technique. The family doctor should therefore be the dentist's main interlocutor and the main coordinator of the follow-up of the incidental findings.

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