



# A rare odontogenic cyst: Gingival cyst of the adult. A series of 20 new cases from a single center

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## ABSTRACT

Gingival cyst of the adult (GCA) is a rare entity and comprises around 0.3% of all odontogenic cysts. Due to its rarity, there are a few retrospective studies on it. Therefore, the aim of this study was to present casuistic data of a 20-year retrospective study performed in a Brazilian oral pathology reference center. All cases diagnosed as gingival cyst of the adult in the last 20 years were retrieved from the files of the Oral Pathology Service. Data from the lesions and patients were tabulated and presented descriptively. From a total of 68,229 oral biopsies, 7,023 were odontogenic cysts, and among these only 20 cases were diagnosed as gingival cyst of the adult, resulting in the largest series of gingival cyst of the adult, from a single center, in the last 15 years. Most cases occurred in women, and although 53% affected the anterior mandible, 40% occurred in the anterior maxilla, which contrasts with the previous literature. Despite being a rare lesion GCA should be considered in the clinical differential diagnosis of gingival lesions presenting either in the maxilla or mandible.

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## 1. Introduction

Gingival cyst of the adult (GCA) is a rare odontogenic lesion that arises from the dental lamina rests. It occurs more frequently in the mandible, commonly in the vestibular gingiva of canine and premolars. Usually it affects adults around the 5th and 6th decades of life. Clinically it appears as a small, painless, bluish single vesicle or nodule, but occasionally may be multiple (Brod et al., 2017; Giunta, 2002; Kelsey et al., 2009).

The clinical differential diagnosis includes: lateral periodontal cyst, fibroma, peripheral ossifying fibroma, peripheral giant cell granuloma, pyogenic granuloma, mucocele, parulis and periapical cyst (Kelsey et al., 2009).

Due to its rarity, since 1939 only 157 cases were reported and a few retrospective studies of GCA are found in the English literature (Wagner et al., 2015). The largest sample presented was from 1979, with 33 cases, followed by another one from 2002, presenting 22 cases (Wagner et al., 2015). Thus, presently a 20-year retrospective study was carried out to contribute with the comprehension of the GCA.

## 2. Material and method

This study received approval from the Institution Ethics Committee of the University of São Paulo (n. 3.065.657).

Cases diagnosed as odontogenic cysts were retrieved from the files of the Oral Pathology Service at the School of Dentistry of the University of São Paulo (USP), from January of 1997 to October of 2017. The clinical data from the cases diagnosed as GCA were collected and tabulated using Excel (Microsoft office, 2016) and presented descriptively.

## 3. Results

From a total of 68,229 oral biopsies, 7,023 odontogenic cysts (10.29%) were found and among them 20 cases were diagnosed as GCA (0.029% of the total of biopsies and 0.3% of the odontogenic cysts).

Sixty-five per cent of the patients were females, 55% were in the 5th and 6th decade of life at the moment of diagnosis and the most affected regions were the anterior mandible (53%) and anterior maxilla (40%). Data from each case is presented in Table 1, and age and sex distribution are shown in Table 2. The site distribution may be observed in Fig. 1.

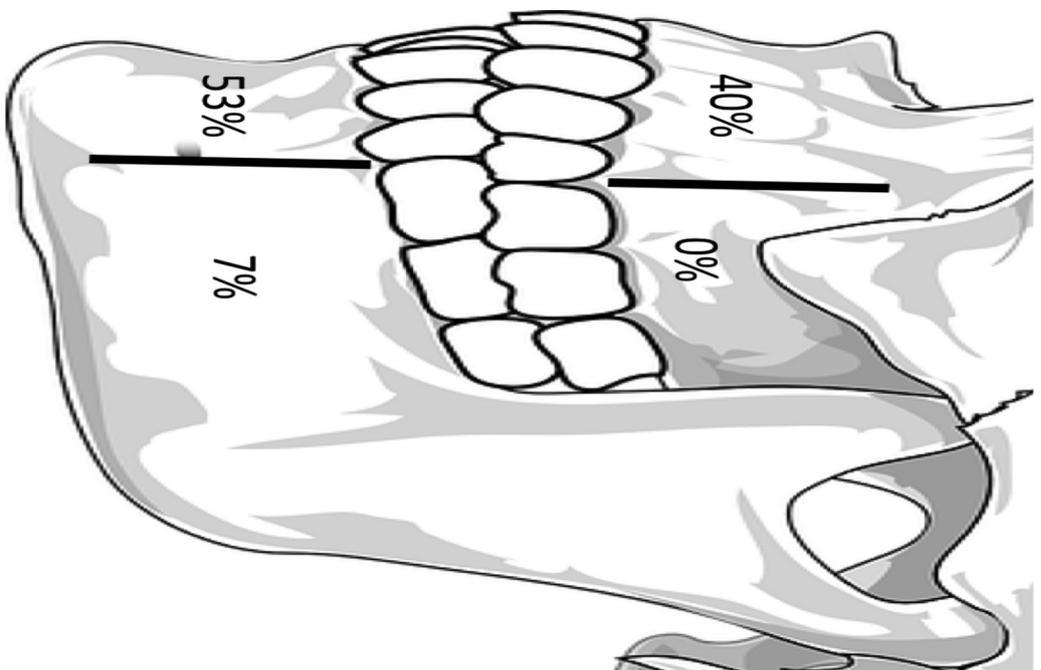
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**Table 1**  
Clinical information of the 20 cases of GCA.

Case	Age	Sex	Ethnicity	Site	Clinical diagnosis	Clinical presentation	Mucosal color	Radiographic aspect	Symptomatology	Size (mm)	Duration (months)	Kind of Biopsy
Case 1	47	Male	White	IRPM	Gingival cyst of the adult	Nodule	Blueish	None	Asymptomatic	N.P.	N.P.	Excisional
Case 2	56	Female	White	Gingiva	Gingival cyst	Nodule	Normal	None	Asymptomatic	5	N.P.	Excisional
Case 3	28	Female	Yellow	SLPM	Radicular cyst/Lateral Periodontal cyst	Nodule	Normal	N.P.	Asymptomatic	N.P.	24	Incisional
Case 4	31	Female	White	IRM	Inflammatory gingival cyst	Nodule	Reddish	None	Symptomatic	5	1	Excisional
Case 5	78	Female	White	IRCPM	Gingival cyst of the adult	Vesicle	Translucent	None	Asymptomatic	4	18	Excisional
Case 6	78	Female	White	ILLIC	Gingival cyst of the adult	Vesicle	Translucent	None	Asymptomatic	2	18	Excisional
Case 7	52	Female	White	IRPM	Intraosseous cyst	Nodule	Whitish	Radiolucent	Symptomatic	3	1	Excisional
Case 8	65	Female	White	SCILLI	Mucocele	Nodule	Normal	None	Asymptomatic	2	1	Excisional
Case 9	42	Male	White	ILLIC	Gingival cyst of the adult	Nodule	Pale	N.P.	Asymptomatic	3	6	Excisional
Case 10	62	Male	White	N.P.	Radicular cyst	Nodule	Normal	Radiolucent	Asymptomatic	10	2	Excisional
Case 11	30	Female	N.P.	N.P.	Peripheral giant cell granuloma	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
Case 12	48	Female	Black	SLSPM	Gingival cyst of the adult	N.P.	Reddish	Other	Asymptomatic	4	N.P.	Excisional
Case 13	76	Male	Black	ILFPM	Odontogenic cyst	Other	Translucent	N.P.	Asymptomatic	15	6	Excisional
Case 14	55	Male	White	Gingiva	Gingival cyst of the adult	N.P.	Reddish	Other	Asymptomatic	5	N.P.	Excisional
Case 15	44	Male	White	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
Case 16	41	Female	White	SRC	Gingival cyst	N.P.	Whitish	N.P.	Asymptomatic	15	4	N.P.
Case 17	46	Female	N.P.	SLFPM	Residual cyst	Nodule	Purple	Not applicable	N.P.	5	N.P.	Excisional
Case 18	57	Male	Black	SLC	Mucocele/Gingival cyst	Nodule	Purple	Not applicable	Asymptomatic	5	2	Excisional
Case 19	54	Female	N.P.	IRLIC	Periodontal lateral cyst/Gingival cyst	N.P.	N.P.	N.P.	Asymptomatic	N.P.	8	N.P.
Case 20	79	Female	Black	IRPM	Gingival cyst	Vesicle	Purple	None	Asymptomatic	5	2	Excisional

IRPM – inferior right premolars, IRM – inferior right molars, SLPM – superior left premolar, IRCPM – inferior right canine and premolar, ILLIC – inferior left lateral incisor and canine, SCILLI – Superior central incisor and left lateral incisor, IRLIC – Inferior right lateral incisor and canine, SLSPM – Superior left second premolar, ILFPM – inferior left first premolar, SRC – superior right canine, SLFPM – Superior left first premolar, SLC – Superior left canine, N.P. – Not provided.

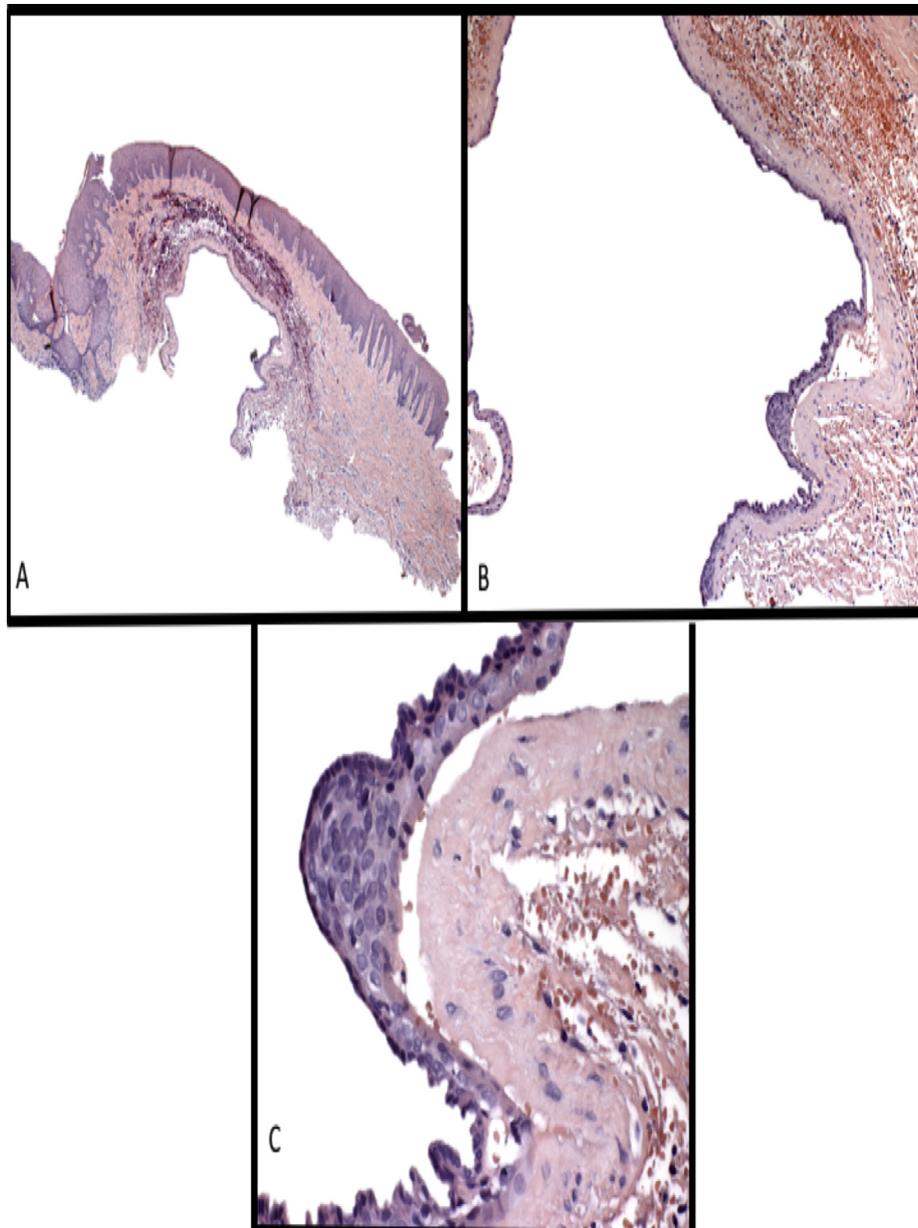
**Fig. 1.** Percentage of cases of GCA affecting the jaws.**Table 2**  
Age and sex distribution of Gingival cyst of the adult.

Age	n	%
21–30	2	10
31–40	1	5
41–50	6	30
51–60	5	25
61–70	2	10
71–80	4	20
Sex	n	%
Male	7	35
Female	13	65

Histopathological aspects of the cysts studied were those typically seen in GCA, a non-inflammatory fibrous capsule lined by a non-keratinized thin epithelium, that occasionally formed plaques (Fig. 2).

#### 4. Discussion

Since GCA is a rare lesion, retrospective studies are scarce in the literature (Wagner et al., 2015). In most studies, they are only cited among odontogenic cysts without a detailed description of their particular characteristics (Jones et al., 2006; Villasis-



**Fig. 2.** Characteristic histological aspects of CGA. A – Cystic cavity under normal mucosa (2,5X) B – Thin epithelium lining (10X) C – Epithelial plaque and subepithelial stroma hyalinization (40X).

**Table 3**

Odontogenic cyst distribution.

Odontogenic cysts	n (%)
Radicular cyst	3,429 (49)
Odontogenic cyst NOC	1,411 (20.1)
Odontogenic keratocyst	938 (13.3)
Dentigerous cyst	523 (7.4)
Paradental cyst	345 (4.9)
Residual cyst	187 (2.7)
Calcifying odontogenic cyst	91 (1.3)
Orthokeratinised odontogenic cyst	33 (0.5)
Glandular odontogenic cyst	26 (0.4)
Gingival cyst of the adult	20 (0.3)
Botryoid odontogenic cyst	10 (0.1)
Lateral periodontal cyst	10 (0.1)
<b>Total</b>	<b>7,023 (100)</b>

NOC: not otherwise categorized.

Sarmiento et al., 2017). GCA, in general, corresponds to less than 0.5% of all odontogenic cysts, corroborating with our findings (0.3%) (Wagner et al., 2015; Jones et al., 2006). As seen in Table 3, GCA is one of the least frequent odontogenic cysts.

Our sample was composed predominantly of female patients (65%). Six patients (6/20) were in the fifth decade of life (30%), as also shown in the literature (Giunta, 2002; Kelsey et al., 2009; Jones et al., 2006; Villasis-Sarmiento et al., 2017; Chrcanovic and Gomes, 2018). Most authors found GCA as being more common in the mandible (Brod et al., 2017; Giunta, 2002; Kelsey et al., 2009; Jones et al., 2006; Villasis-Sarmiento et al., 2017; Chrcanovic and Gomes, 2018), both, in anterior (Brod et al., 2017; Giunta, 2002; Kelsey et al., 2009) and posterior (Villasis-Sarmiento et al., 2017), and less often in maxilla (Brod et al., 2017). Of the 20 cases presently studied, 53% occurred in the anterior mandible and 40% in anterior maxilla, revealing an incidence almost equal to the anterior gnathic bones, contrasting to data shown by the previous literature.

Most of our cases (10/20, 50%) were represented by a nodule, with an average size of 5.86 mm. In 2 out of 20 cases (10%), radiographic alterations were present (Kelsey et al., 2009). In an earlier report as well as in the present, it was shown that half of the dentists thought of a GCA by its clinical presentation (Giunta, 2002), and other clinical hypotheses considered were: radicular cyst, periodontal lateral cyst, inflammatory gingival cyst, intra-osseous cyst, mucocele, peripheral giant cell granuloma, odontogenic cyst, and residual cyst.

In spite of GCA being a rare lesion since it represented only 0.029% of oral biopsies from our Service, and less than 0.5% of odontogenic cysts, at least one new case appears every year.

In the present study it was shown that the incidence of GCA was quite similar in both maxilla and mandible, and, in spite of being a rare lesion, even in an oral pathology reference center, GCA should be considered as a clinical differential diagnosis and the familiarity with its histopathological aspects is essential to discard other lesions that may represent a worse prognosis or demand a more aggressive treatment.

#### Conflicts of interest

None to declare.

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