

Extended Abstract

# Odontogenic Cysts: A 30-Year Retrospective Clinicopathological Study<sup>†</sup>

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Odontogenic cysts (OC) are one of the most frequent lesions affecting the jaws. These lesions are characterized by a pathologic cavity, either completely or partially covered by an epithelial tissue of odontogenic origin. OCs share similar features; therefore, the differential diagnosis requires a combination of clinical, radiological, and histological findings [1]. This study aims to perform an epidemiologic analysis of OCs treated from 1990 to 2019 at the “Ospedali Riuniti” General Hospital, Ancona, Italy, according to 4th Edition of WHO Classification of Head and Neck Tumours.

The present study considered all the patients who underwent surgery for jaw cysts from January 1990 to August 2019. Data were retrieved and catalogued from clinical records and from the archive of the Institute of Pathology, Marche Polytechnic University, Italy. Because of the 30-year period considered, histological slides of OCs were re-evaluated to confirm the diagnosis, according to the current WHO criteria [2]. From each case, they were extrapolated the following information: age, sex, diagnosis, site distribution, and relapses.

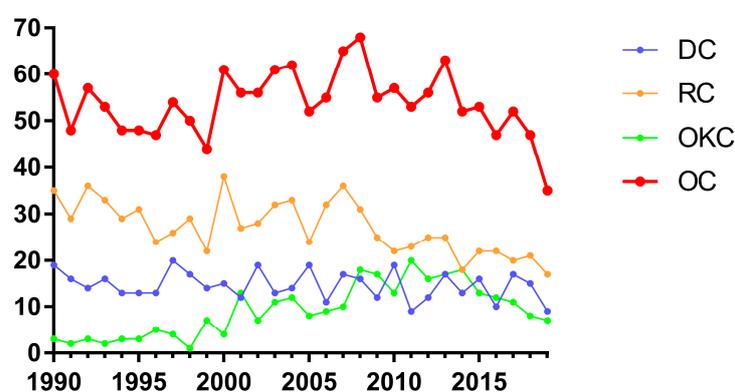
Overall, 1942 patients were treated for jaw cysts, corresponding to 1862 patients with OC, of which 98 showing multiple OCs at the time of diagnosis, and 80 patients with nonodontogenic cysts (NOC). Furthermore, 50 patients showed at least one OC recurrence during follow-up.

2126 surgical specimens were retrieved, corresponding to 2046 OCs and 80 NOCs. 50 patients developed 69 recurrences, mainly Odontogenic keratocysts (OKC). Mean age of occurrence for primary OC was  $46.9 \pm 17.1$  years, with a higher frequency in males (M:F ratio of 1.79). Regarding localization, posterior mandibular and anterior maxillary regions were the most commonly affected sites (Mandible:Maxilla ratio of 1.42). Mean size of primary OC was  $1.9 \pm 1.0$  cm (Table 1).

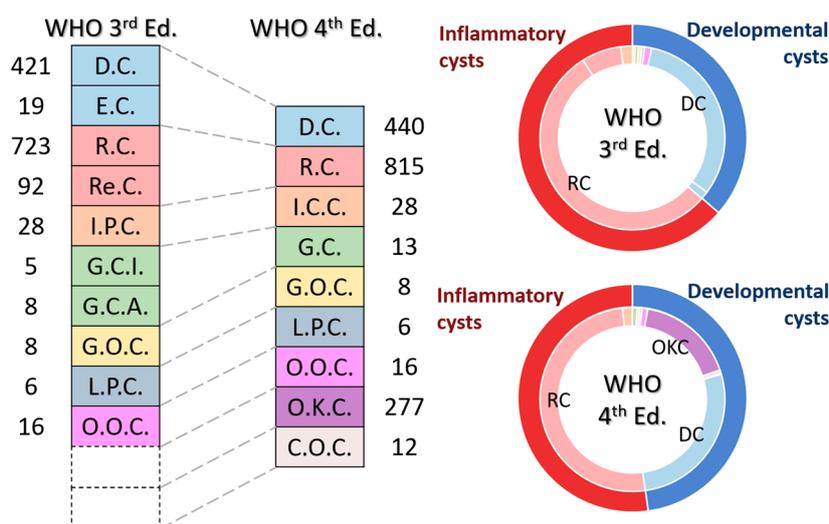
Radicular cysts were the most frequently diagnosed, with 815 cases (39.83%), followed by Dentigerous cysts (21.51%), and OKC (13.54%) (Figure 1). All other OCs showed a very low frequency, reaching a total of 83 cases (4.06%) (Figure 2). Noteworthy, in 431 cases the clinicopathological data were insufficient to establish a certain diagnosis (21.07%).

**Table 1.** Demographic and clinical data of OCs (1990–2019).

Clinical Presentation	N° of Cysts
- Primary OCs	1977
- Recurred OCs	69
Site Distribution	
- Mandible	792
- Maxilla	557
- Not specified	697
Sex (n° of Patients)	
- Males	1194
- Females	668
Age (years)	46.9 ± 17.1
Size (cm)	1.9 ± 1.0



**Figure 1.** Annual frequency of diagnosed OCs in “Ospedali Riuniti” General Hospital, Ancona, Italy (red line). Radicular cysts (RC, orange line) were the most frequently diagnosed, followed by Dentigerous cysts (DC, blue line) and Odontogenic keratocysts (OKC, green line).



**Figure 2.** Relative frequency of diagnosed OCs according to 3rd and 4th Edition of WHO Classification, respectively. In 2017 there was a significant simplification of OC classification; the most important changes regard the reintroduction of Odontogenic keratocyst (OKC) and Calcifying Odontogenic cyst (COC). DC = Dentigerous cyst; EC = Eruptive cyst; RC = Radicular cyst; ReC = Residual cyst; IPC = Inflammatory paradental cyst; ICC = Inflammatory collateral cyst; GCI = Gingival cyst of infant; GCA = Gingival cyst of adult; GC = Gingival cyst; GOC = Glandular odontogenic cyst; LPC = Lateral periodontal cyst; OOC = Orthokeratinized odontogenic cyst.

Although limited in its retrospective nature, these findings could be useful to determine the incidence and prevalence of OCs. Prevalence studies related to OCs should be conducted in each tertiary referral center, in order to improve current epidemiological data.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

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