

Jaw cysts in elderly patients

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Abstract

The present study was aimed at providing a clinical and epidemiological analysis of patients over 65 years old with jaw cysts. Data was obtained from the records of 40 patients with a final pathologically diagnosed "cyst" of the jaw. The patients were distributed into 4 age groups – from 65 to 69 years, from 70 to 74 years, from 75 to 79 years, and over 80 years. The patients from the first, second, and third age groups were equally affected. The male to female ratio was 1:1. The maxilla was affected more frequently than the mandible (1.22:1). Almost a half of the radicular cysts (14 cysts; 46.7%) were in the edentulous regions of the jaws. Radicular cysts affected predominantly the maxilla in premolar's region whereas the dentigerous cysts and the odontogenic keratocysts were observed mainly in the molar region of the mandible. The usual clinical complaints of the patients were painless swelling or suppuration. General anesthesia was the preferred method compared to a local anesthetic (1.35:1). Cystectomies made by an intraoral operative approach predominated over interventions through an extra oral approach by a ratio of 9:1. Radicular cysts were the most frequent jaw cysts in elderly patients, affected equally both sexes, and developed predominantly in maxilla.

Key words: cyst, maxilla, mandible, elderly.

Челюстная киста у пациентов пожилого возраста

Представлен клинический и эпидемиологический анализ пациентов в возрасте выше 65 лет с челюстной кистой. Данные были получены из медицинских карт 40 пациентов с окончательным патологическим диагнозом „челюстная киста”. Пациенты были разделены на 4 возрастные группы: 65-69 лет; 70-74 года; 75-79 лет; и выше 80 лет. Пациенты 1, 2 и 3 группы находились в равных условиях. Соотношение мужчин и женщин было 1:1. Верхняя челюсть была поражена чаще, чем нижняя (1,22:1). Почти половина корневых челюстных кист (14 кист, 46,7%) были в беззубой области челюсти. Обычное обращение пациента к врачу было по поводу безболезненного опухания и нагноения. Общая анестезия была более предпочтительным методом, по сравнению с местной (1,35:1). Цистэктомия была осуществлена преимущественно внутриротовым доступом или через внешний доступ в соотношении (9:1). Корневая киста встречалась чаще у пациентов пожилого возраста, обоих полов и развивается чаще всего в верхней челюсти.

Ключевые слова: киста, верхняя челюсть, нижняя челюсть, пожилой возраст.

Introduction

Cysts are one of the major causes of bone loss in jaws [1]. Cysts of the jaw have been well-described, but we know of no publications that have reported series in elderly patients. Most developed countries have accepted the age of 65 years as the definition of 'elderly' or older person [2].

The World Health Organization (WHO) defines radicular cysts as pathologic bone cavities with an inflammatory genesis, epithelized, developed around the apexes of teeth and rarely laterally to the roots of the teeth in connection with extra lateral root channels.

Dentigerous cysts are epithelial cysts related to the development of the tooth germ. They involve partially or completely the crown of an unerupted tooth and come into contact with it in the area of cement-enamel junction.

The term „odontogenic keratocyst” was proposed by Philipsen in 1956. With the publication of the last classification of jaw cysts, the WHO recommends the name „odontogenic keratocyst” to be replaced by „keratocystic odontogenic tumour”. However, the opinion of the International Association of Oral Pathologists in June 2006 is that the name

„odontogenic keratocyst” should be preserved until the receiving of undisputed evidences at the molecular level proving the neoplastic characteristic of the lesion, arising from epithelial odontogenic rests [3].

The aim of this study was to present clinical and epidemiological analysis of elderly patients (over 65 years) with jaw cysts treated at the Clinic for Maxillofacial Surgery at University Hospital, Plovdiv, Bulgaria.

Material and methods

The study was conducted over a ten year period – from 2001 through 2010. Analysis was based on the clinical records of patients. All patients over 65 years old with a final pathologically diagnosed “cyst” of the upper and lower jaw based on WHO classification from 1992 [4] were enrolled in the study. They received treatment at the Clinics of Maxillo-Facial Surgery, University Hospital, Plovdiv, Bulgaria. The following variables were tested: gender and age distribution, pathological diagnosis, location, reason for the diagnosis, type of anesthesia, and operative approach. SPSS 17.0 software was used for data processing.

Results

During the 10-years period, 40 dentigerous, radicular and odontogenic keratocysts were examined. The cysts were of patients over 65 years old, distributed into 4 age groups – from 65 to 69 years old, from 70 to 74 years old, from 75 to 79 years old, and over 80 years old. The patients from the first, second, and third age groups were equally affected. No statistically significant difference in gender distribution was found (1 male: 1 female). The maxilla was affected more frequently than the mandible (1.22:1). Radicular cysts were the most frequently established cystic lesions. Radicular cysts affected predominantly the maxilla in the premolar region whereas the dentigerous cysts and the odontogenic keratocysts were observed mainly in the molar region of the mandible (fig. 1). Almost a half of the radicular cysts (14 cysts; 46.7%) were in the edentulous regions of the jaws (fig. 2). The usual clinical complaints of the patients were connected to painless swelling or suppuration.

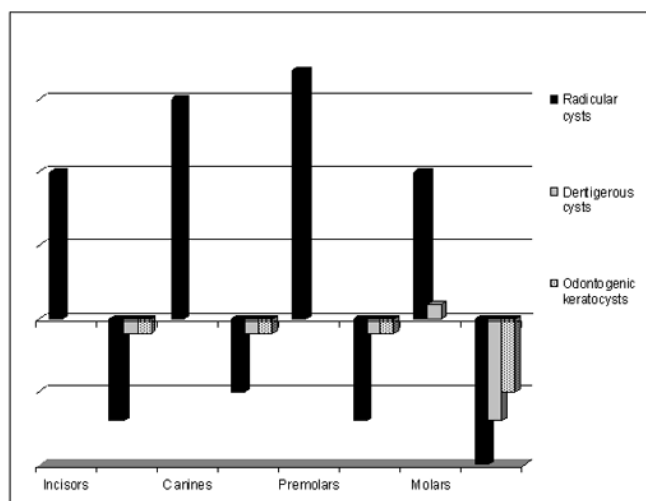


Fig. 1. Distribution of radicular, dentigerous cysts and odontogenic keratocysts in elderly patients by the involved groups of teeth of the upper and lower jaws.

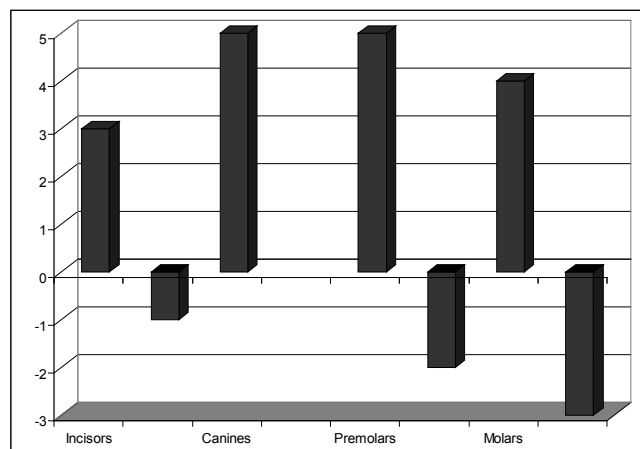


Fig. 2. Distribution of residual cysts in elderly patients of the upper and lower jaws.

General anesthesia was the preferred method compared to a local anesthetic (1.35:1). Cystectomies made by the intraoral operative approach predominated over interventions through the extra oral approach by a ratio of 9:1 (tab. 1).

Discussion

Data received in our study shows the prevalence of radicular cysts (75%), followed by dentigerous cysts (15%). Bodner et al. found out that radicular cysts in 27 edentulous patients with an average age of 60 years were 74%, followed by dentigerous cysts – 11% [5]. Our previous results with the general population are in agreement with the frequency of the radicular cysts (70.1%) but in contrast with the frequency of the dentigerous cysts (23.5%) [6]. Most cysts were found in the maxilla (55%) and the ratio of maxilla to mandible was 1.22:1, which is contradicts the results of Bodner et al. that found 85% of jaw cysts in the maxilla [5], but confirms our earlier results with general population – 53.3% of jaw cysts in the maxilla versus 46,7% in the mandible [6]

Table 1

Distribution of 40 cysts in the jaws of patients over 65 years of age by age group, sex, location, histological type, reason for diagnostics, type of anesthesia, and operative approach

Age groups		65 – 69 years	70 – 74 years	75 – 79 years	over 80 years	Total	
Patients	Number	13	13	12	2	40	
	Percent	32.5%	32.5%	30%	5%	100%	
Sex	Male	Number	7	6	5	2	20
		Percent	17.5%	15%	12.5%	5%	50%
	Female	Number	6	7	7	0	20
		Percent	15%	17.5%	17.5%	0	50%
Location	Upper jaw	Number	8	6	8	0	22
		Percent	20%	15%	20%	0	55%
	Lower jaw	Number	5	7	4	2	18
		Percent	12.5%	17.5%	10%	5%	45%

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Histological type of cysts	Radicular	Number	10	10	9	1	30
		Percent	25%	25%	22.5%	2.5%	75%
	Dentigerous	Number	1	2	2	1	6
		Percent	2.5%	5%	5%	2.5%	15%
	Odontogenic keratocysts	Number	2	1	1	0	4
		Percent	5%	2.5%	2.5%	0	10%
Reason for diagnostics	Casual X-ray	Number	1	4	1	0	6
		Percent	2.5%	10%	2.5%	0	15%
	Painless mass	Number	5	5	8	1	19
		Percent	12.5%	12.5%	20%	2.5%	47.5%
	Suppuration	Number	7	4	3	1	15
		Percent	17.5%	10%	7.5%	2.5%	37.5%
Type of anesthesia	Local	Number	5	4	7	1	17
		Percent	12.5%	10%	17.5%	2.5%	
	General	Number	8	9	5	1	23
		Percent	20%	22.5%	12.5%	2.5%	57.5%
Operative approach	Intraoral	Number	11	12	11	2	36
		Percent	27.5%	30%	27.5%	5%	90%
	Extraoral	Number	2	1	1	0	4
		Percent	5%	2.5%	2.5%	0	10%

and with residual cysts, that occur in the maxilla are 1.67 times more frequent than in the mandible [7].

Radicular cysts affected predominantly the maxilla and 46.7% of them were in the edentulous regions. Earlier reports showed a higher percent of root remains in the maxilla than in the mandible, which could be the possible etiology [8].

The male to female ratio (1:1) is in contrast with the results of Bodner et al. that found a 4.4:1 ratio [5] but is comparable with our earlier results of the general population (1.22:1) [7] and the results of other authors for the general adult population, where the ratio was between 1.3:1 and 1.7:1 [8, 9, 10, 11].

The most frequent reason for a diagnostic was a painless mass (47.5%). Our earlier results in residual cysts specified that the most frequent reason for a diagnostic was suppuration (45.5%) [7].

All of the cysts were enucleated with or without bone grafting which is in contrast with data of other reports where marsupialization was done in most of the patients, the cystic cavity slowly decreased in size and the cyst was usually enucleated three to six months later [5, 12, 13]. As a surgical method, marsupialization has some disadvantages, which contains a two-stage procedure, prolonged time for bone healing, and an existing opportunity to overlook some pathological process (such as squamous cell carcinoma) [5].

Conclusions

Jaw cysts in elderly patients can be characterized with the following special features:

1. Equally affects both sexes.
2. More frequently affects the maxilla.
3. The predominant histological type is the radicular cyst.
4. Almost a half of the radicular cysts are in the edentulous regions.

5. The most frequent clinical symptom is painless swelling.

6. Cystectomy is the preferred operative method.

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