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Articles of marsupialization and decompression on cystic lesions of the jaws: A literature review

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ABSTRACT

Objective: The articles on the usage of marsupialization and decompression for most cystic lesions of the jaws were reviewed by literature.
Methods: A computer database search was performed on PubMed and Ovid for all years before 2011 available. Search key words were (marsupialization or decompression), (cyst or cystic) and (dental or oral). The descriptive statistics were made based on journals, areas that originated from, diagnosis, site of involvement, treatment modality, devices, follow-up, and recurrence.
Results: A total of 69 articles were included and analyzed. The topic has been reported in 33 kinds of journals by 23 countries and areas. The cystic lesions mainly included dentigerous cyst, keratocystic odontogenic tumor, radicular cyst, and ameloblastoma. The other treatments combined with marsupialization and decompression was tooth extraction, tooth traction, enucleation, curettage, and bone resection. 32 articles reported the devices, including tube, gauze, obturator and others. 45 articles reported the definite time for follow-up and 54 articles reported no recurrence of the lesions.
Conclusion: Marsupialization or decompression could be performed as single surgical procedure or combined with other treatment modalities through different devices for many cystic lesions in different sites of jaws. It has been accepted and used as a conservative surgical option. The long term observation confirmed the effectiveness of the treatment.

Contents

☆ AsianAOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

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1. Introduction

Marsupialization and decompression of cysts are probably the earliest advocated treatments and were first suggested by Partsch in the German literature in the late 19th century for cystic lesions of the jaws [1,2]. Although the two terms are used interchangeably in many articles, they have different technical meanings. *Decompression* implies any means taken to reduce the pressure from within a cyst. *Marsupialization* in its true sense means the conversion of the cyst into a pouch, and this implies the creation of a sizable stoma or opening that has the ability to maintain itself [3]. *Marsupialization* is a means of decompressing a cyst.

In recent years, many articles have reported marsupialization or decompression as a treatment modality for most cystic lesions of the jaws [3–71]. Some of them have accepted marsupialization and decompression as a conservative treatment modality for some cystic lesions such as dentigerous cysts [4–6], radicular cysts [7–9], keratocystic odontogenic tumor (KCOT) [10–12], and cystic ameloblastoma [13–15]. The major advantages of either procedure are minimizing the cyst size and limiting the extent of surgery, however they do not increase the recurrence rate of cysts [11,12,16,17]. Some articles suggest the possibility of marsupialization as a first option for the treatment of large cystic lesions [11,13,18].

However, this type of treatment has also given rise to debate in literature [17,19,20], for the pathologic tissue is thought to be left in situ by marsupialization or decompression [11,12,21,22]. In order to eliminate the residual cystic matter, the procedure is often followed by secondary treatment, such as enucleation, curettage, and even bone resection [11,15–17].

Since there were mainly single case reports or small series in literature, it is necessary to provide clinical epidemiological information of marsupialization and decompression on cystic lesions to more clinicians. Therefore, this article reviewed all the articles on the usage of marsupialization and decompression from a clinical epidemiological view.

2. Methods

This review study was reviewed and approved by the Institutional Review Board of the School of Stomatology, FMMU.

2.1. Literature search

A computer database search was performed through the use of PubMed and Ovid. Search key words used were (marsupialization or decompression) and (cyst or cystic) and (dental or oral). Search was in all fields, English languages and for all years before 2011 available.

Abstracts and full text articles (obtained from National Library of Medicine (NLM, US)) were reviewed. Articles relevant to treatment modalities of cystic lesion of the jaws were selected.

Articles not included in the study were those written in non-English language, those on the pathologic analysis of cyst, those on the osteogenesis evaluation, and those which contents do not focus on the treatment of cystic lesion.

2.2. Statistical analysis

SPSS version 13.0 for Windows was used for statistical analysis. The descriptive statistics were made on all the selected articles. The descriptive variables were journals, areas that cases originated from, diagnosis, site of involvement, treatment modality, devices for treatment, time of follow-up, and recurrence.

3. Results

A total of 69 articles were included and analyzed in this paper. The statistical analysis results were listed below based on the different descriptive variables.

3.1. Journals

There were altogether 33 journals publishing on marsupialization or decompression of cystic lesions of the jaws (Table 1). More than ninety percent of the articles (63/69) were from dentistry, oral surgery. When calculated in detail, nearly half the articles (28/63) were of comprehensive dentistry, 13 were of pediatric dentistry, 13 were of oral surgery, and the others were of endodontics, orthodontics, radiology and implantology. The other articles (6/69) were from the fields of otorhinolaryngology, pathology, and comprehensive medicine.

3.2. Areas that cases originated from

Altogether marsupialization or decompression on cystic lesions of the jaws has been reported by 23 countries and areas (Table 2).

Table 1
Analysis on journals of the articles.

Journal fields	Journal name	Article number	Sum
Comprehensive dentistry	Oral Surg Oral Med Oral Pathol Oral Radiol Endod	13 [11,13,15–17,23–30]	28
	J Indian Soc Pedod Prev Dent	3 [48–50]	
	J Am Dent Assoc	3 [51–53]	
	Quint Int	2 [54,55]	
	Aichi Gakuin Dent Sci	1 [56]	
	Br Dent J	1 [57]	
	Dent Update	1 [6]	
	J Conservative Dent	1 [7]	
	J Ir Dent Assoc	1 [58]	
	J Oral Sci	1 [20]	
	Mineral Stoma	1 [59]	
Oral surgery	J Oral Maxillofac Surg	8 [3,10,12,14,31–34]	13
	Int J Oral Maxillofac Surg	2 [35,36]	
	Br J Oral Maxillofac Surg	1 [37]	
	Dent Traumatol	1 [6]	
	Oral Oncol	1 [19]	
Pediatric dentistry	J Clin Pediatr Dent	6 [5,8,38–41]	13
	Int J Paediatr Dent	2 [18,42]	
	J Dent Child (Chica)	2 [43,44]	
	Pediatr Dent	2 [45,46]	
	Eur Arch Paediatr Dent	1 [47]	
Endodontics	J Endod	2 [9,60]	3
	Int Endod J	1 [61]	
Orthodontics	Am J Orthod Dentofacial Orthop	2 [62,63]	3
	Angel Orthod	1 [64]	
Radiology	Dentomaxillofacial Radiol	2 [65,66]	2
Implantology	J Oral Implantol	1 [22]	1
Non-oral and dentistry journals	Arch Pathol Lab Med	1 [67]	6
	Case J	1 [68]	
	ENT J	1 [69]	
	Int J Pediatr Otorhinolaryngol	1 [21]	
	Laryngoscop	1 [70]	
	Med J Malaysia	1 [71]	