

## Characteristics and Treatment of Ossifying Fibroma at Dr. Hasan Sadikin General Hospital during 2019 – 2021

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### Abstract

**Introduction:** Ossifying fibroma is a benign neoplasm commonly found in the bones of the face and has the potential for excessive growth, causing bone destruction and recurrence. Treatment for ossifying fibroma itself has their own complications which result as defect in the area that were affected on surgery. Even so, characteristics and treatment of ossifying fibroma itself differs in distinct population. Therefore, it was important to study the characteristic and treatment of ossifying fibroma at Dr. Hasan Sadikin General Hospital during 2019 – 2021.

**Methods:** The sample in this study patients that are diagnosed by histopathologic finding to be with ossifying fibroma during January of 2019 until December of 2021 at Dr. Hasan Sadikin General Hospital. There were 17 patients that met the inclusion criteria. This study was conducted using total sampling method and is a retrospective descriptive study using medical records of patients that met the inclusion criteria.

**Results:** Based on the gender criteria, most of the ossifying fibroma patients were female, with the total of 13 female respondents. The average age on this study is 27,87 with 19,49 deviation standards. Based on the classifications of defects, most of the mandibular defect respondents have type I mandibular defect, with total of five respondents. Meanwhile, most maxillary defect respondents have type II maxillary defect, which there were two respondents. Based on the location of the lesion itself, most of the lesion were found in mandibular, with 11 respondents. Particularly, based on the treatment received by the respondents, most respondents went under dredging treatment, with about four people underwent dredging.

**Conclusion:** Most of the ossifying fibroma patients were female (76,47%). The average age on this study is 27,87 with 19,49 deviation standards. Most of the mandibular and maxillary defect are type I mandibular defect (45,45%) and type II maxillary defect (40%). Most of the lesion were found in mandibular (64.71%). and most respondents went under dredging treatment (23,53%).

**Keywords:** ossifying fibroma, patients characteristics, treatment.

## Introduction

Ossifying fibroma is a benign neoplasm commonly found in the bones of the face and has the potential for excessive growth, causing bone destruction and recurrence. Ossifying fibroma consists of fibrous stromal tissue where new bone tissue forms and it is classified as one of the benign fibro-osseous lesions of the jaw.<sup>1</sup> Ossifying fibroma tends to occur during the third and fourth decades of life, more frequently in women than in men. This lesion is slow-growing, asymptomatic, and expansive.<sup>1,2</sup>

In the head and neck region, ossifying fibroma can be observed in the jawbones, craniofacial bones, and the anterior cranial fossa. Lesions typically appear in the tooth-bearing areas, most commonly in the premolar and molar regions of the mandible. There are two main classifications of treatment for ossifying fibroma which include conservative treatment and radical treatment. Conservative treatments are usually indicated for young patients. Meanwhile, radical treatment is indicated in patients with expanded solid ossifying fibroma. Conservative treatment includes enucleation and dredging, which has high recurrence rate. This has become a reason as to why more surgeon has opted to radical treatment instead.<sup>2, 3, 4</sup>

Treatment for ossifying fibroma itself has their own complications which result as defect in the area that were affected on surgery. These defects could lead to asymmetrical face and decrease of speech function and mastication. The defects itself is grouped by its location and component. Some defects are treated later on with post-resection-reconstruction.<sup>2, 3, 6, 7</sup>

Even so, ossifying fibroma have different rate of incidence in different populations. Characteristics and treatment of ossifying fibroma itself differs in distinct population.<sup>3, 4</sup> Understanding the features of patients and treatment choices for patients with ossifying fibroma is important in order to not only identify and diagnose ossifying fibroma in clinical

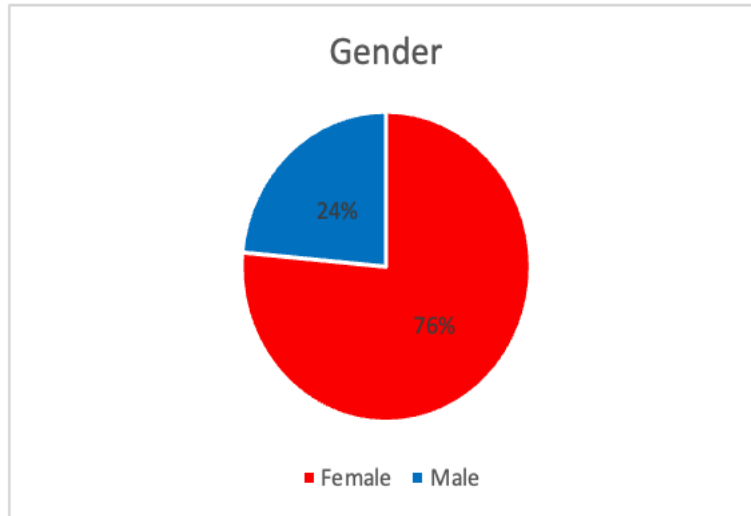
practice, but also to understand the most common approach that are needed in one population. This study aimed to understand the characteristic and treatment of ossifying fibroma at Dr. Hasan Sadikin General Hospital during 2019 to 2021.

## Methods

This research is a retrospective descriptive study using medical records of patients that are diagnosed by histopathologic finding to be with ossifying fibroma during January of 2019 until December of 2021 at Dr. Hasan Sadikin General Hospital. Other inclusion criteria are receiving treatment during the time given and completion of the accessible medical record. Total sample size of this research were 17 people. The variables studied in this research include age, gender, diagnosis, location of the lesion, treatment, maxillary defect, and mandibular defect. The data collection was conducted with a total sampling method using medical records of patients diagnosed with ossifying fibroma during January of 2019 until December of 2021 at Dr. Hasan Sadikin General Hospital. All the data collected is then computerized as a set of information. Prior to execution of the research, an ethical clearance letter has been obtained from the Research Ethics Committee of the Faculty of Medicine Padjadjaran University.

## Results

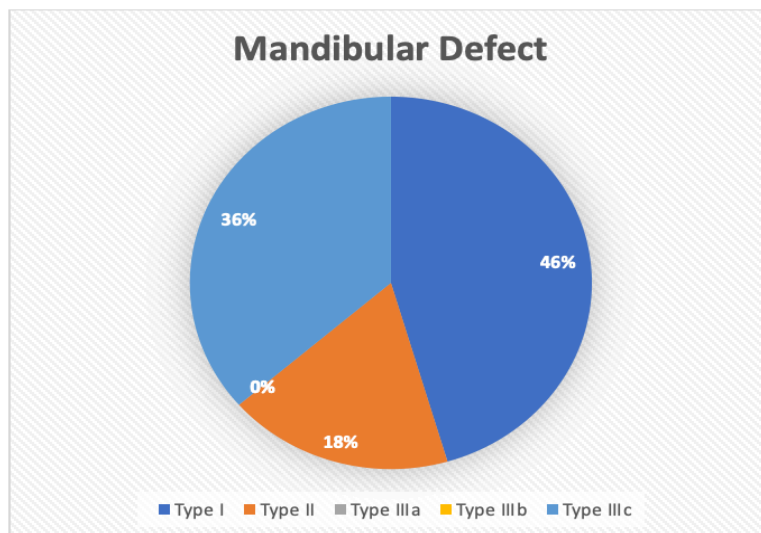
The data used in this research were secondary data collected from the medical records of patients with ossifying fibroma who were treated at Dr. Hasan Sadikin General Hospital during January 2019 – December 2021 to determine its characteristics based on age, gender, diagnosis, location of the lesion, treatment, maxillary defect, and mandibular defect. This research obtained 17 patients data that fit the inclusion criteria. The characteristics of ossifying fibroma in patients at the Oral Surgery Department of RSHS are presented below



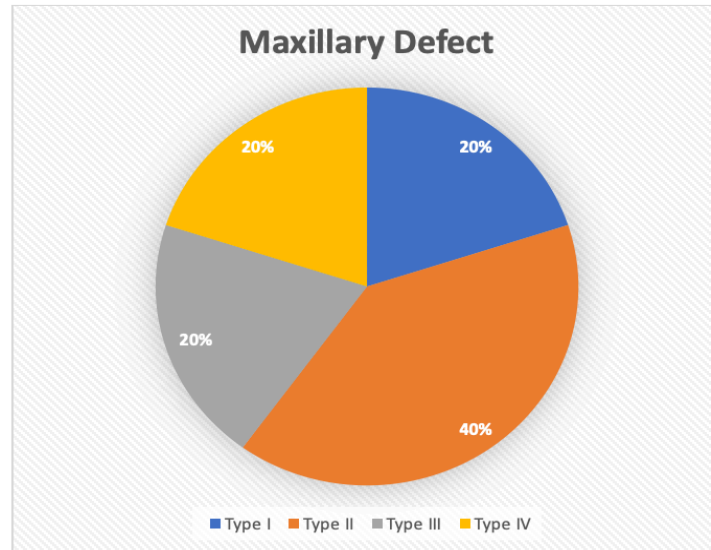
**Figure 1: patients characteristics based on their gender**

**Table 1: Patients characteristics based on their diagnosis**

Diagnosis	N (%)
Ossifying fibroma at mandibula	6(35,29)
Juvenile psammomatoid ossifying fibroma ar. mandibula et maxilla	1(5,88)
Peripheral Ossifying Fibroma at mandibula dextra	1(5,88)
Ossifying fibroma at submandibular	1(5,88)
Ossifying Fibroma at gingival labial anterior maxilla Juvenile Psammomatoid ossifying fibroma ar maxilla and mandibular, Post Dredging ke-4	1(5,88)
Ossifying fibroma at maxilla	3(17,64)
Cementofying fibroma at right maxilla	1(5,88)
Ossifying fibroma at maxilla and mandibula	1(5,88)
Semento ossifying fibroma at maxilla	1(5,88)



**Figure 2: distribution of mandibular defect on patients**



**Figure 3: distribution of maxillary defect on patients**

**Table 2: distribution of patients' treatments**

Type of Treatments	Number (%)
Hemimandibulectomy	2(11,76)
Segmental Resection	1(5,88)
Dredging	4(23,52)
Post anterior hemimaxillectomy + Prophylactic neck dissection	1(5,88)
Debulking + Reshaping Maxillary	1(5,88)
Enucleation	1(5,88)
Mandibular segmental resection + Maxillary debulking	1(5,88)
Hemimaxillectomy	2 (11,76)
Mandibular marginal resection + reconstruction with AO plate + SND at level I and II	1(5,88)
Debulking + Supraomohyoid neck dissection + reconstruction with the indication of maxillary ossifying fibroma	1(5,88)

Based on the data collected in this study, the majority of respondents were female (13 respondents, 76.47%). In this study, there were four male respondents (23.52%). The average age of respondents diagnosed with ossifying fibroma in this study was 27.87 with a standard deviation of 19.49.

In the mandibular region, the most common defect classification was type I defect, found in five respondents (45.45%), followed by type IIIc defect in four respondents (36.36%) and type II defect in two respondents (18.18%). In the maxillary region, the most common classification was type II maxillary defect, found in two respondents (40%),

followed by type I maxillary defect, type III maxillary defect, and type IV maxillary defect, each defect was found in only one respondent (20%).

In this study, the majority of ossifying fibroma cases occurred in the mandible, with eleven respondents out of a total of 17 respondents (64.71%). Ossifying fibroma occurred in the maxilla in three respondents (17.64%). The most common treatment performed in this study was dredging, carried out in four respondents (23.53%). Hemimandibulectomy was performed in two respondents in this study (11.76%).

## Discussion

Based the result of this study, the majority of the respondents were female (23.53%). This result is aligned with research conducted by Idani et al, where the incidence of ossifying fibroma was higher in women compared to men, with a sex ratio of 0.42.<sup>7</sup> This differs from the study by Liu Y et al, where the incidence of ossifying fibroma was highest in the third to fourth decades, with a male-to-female ratio of 1:1.5.<sup>3</sup>

Ossifying fibroma usually occurs in women in their twenties and can appear anywhere in the oral cavity, including the tongue, lips, floor of the mouth, palate, or the apex of the maxillary and mandibular alveolar. In this study, the average age of respondents diagnosed with ossifying fibroma was 27.87 with a standard deviation of 19.49. This result differs from the study by Liu et al, where the incidence in the Chinese population showed an average age of 31.4 years with a female-to-male ratio of 1.5:1, and 90.8% of tumours were found in the mandible. A study by Hatada et al. in the Japanese population showed an average age of 34.7 years with a female-to-male ratio of 1.6:1, and 92.6% tumours were in the mandible.<sup>3, 8</sup>

Ossifying fibroma commonly occurs in patients in their second to fourth decades of life, although it can also occur in children, adolescents, and older adults. In the mandibular region, the most common classification was type I, found in 5 respondents (45.45%), while in the maxilla, the most common classification was type II maxillary, found in 2 respondents (40%). The mandible (especially the molar region) is the most common site for ossifying fibroma compared to the maxilla, and among other facial and skull bones, the periorbital, frontal, ethmoid, sphenoid, and temporal bones are relatively common locations for this tumour. In this study, the majority of ossifying fibroma cases occurred in the mandible, with 11 respondents out of a total of 17 respondents (64.71%).

The most common treatment in this study was dredging, performed in 4 respondents (23.53%). Conservative management of ossifying fibroma

includes enucleation and dredging. Enucleation involves the complete removal of the tumour and healthy bone. This is usually recommended for cystic types of ossifying fibroma in young individuals, as it minimally affects facial aesthetics. It is also recommended for older patients in consideration of their overall health. After this treatment, close observation is necessary. In case of recurrence, resection or re-enucleation can be performed.<sup>3, 4</sup> The dredging method is a conservative surgical procedure where, after deflation and either enucleation or enucleation alone, dredging (excavation) is performed to remove the entire tumour tissue and stimulate new bone formation. This method was introduced by Kawamura in 1996.<sup>3, 4</sup>

Hemimandibulectomy was performed in 2 respondents in this study (11.76%). This technique involves the removal of the entire mandibular ramus, condylar process, and part of the mandibular body on one side of the lower jaw. Indications for hemimandibulectomy include ossifying fibroma that has spread to the condylar process, coronoid process, part of the ramus, and the mandibular or maxillary body. This technique results in a significant facial defect.<sup>5</sup>

Marginal resection involves removing the entire tumour tissue with a portion of healthy alveolar bone by enblock method without disrupting continuity of the bone itself. This is often referred to as intraoral block excision. This technique is only performed for small ossifying fibromas where bone involvement is limited. Excision is done intraorally enblock the entire tumour along with a portion of healthy bone and involved teeth.<sup>2, 4, 9, 10</sup> Marginal resection in this study was performed in 1 respondent (5.88%).

Segmental resection disrupts the continuity of bone, involving the removal of the jawbone, including the body and ramus. It is indicated for relatively larger ossifying fibromas where the remaining edge of the jawbone is so thin that it may lead to fractures in that area. Incisions can be made intraoral or extraoral. After separating the tumour and jawbone from the surrounding soft

tissue and muscles, the entire tumour with its jawbone is removed together with the involved teeth. The separated bone fragments can then be reconnected in various ways, such as cross-linking with stainless wire, connecting with Kirschner wire inserted into the mandibular canal, or by grafting bone from the patient's own body. Segmental resection in this study was performed in 1 respondent (5.88%).

### Conclusion

Based on the results of research conducted at dr. Hasan Sadikin General Hospital during 2019 - 2021, it can be concluded as follows:

1. Based on the gender criteria, most of the ossifying fibroma patients were female, with the total of 13 respondents (76,47%)
2. The average age on this study is 27,87 with 19,49 deviation standards.
3. Based on the location classifications, most of the mandibular defect respondents have type I mandibular defect, five respondents (45,45%). Meanwhile, most maxillary defect respondents have type II maxillary defect, which there were two respondents (40%).
4. Based on the location of the lesion itself, most of the lesion were found in mandibular, with 11 respondents or around 64.71%
5. Based on the treatment received by the respondents, most respondents went under dredging treatment, with the total of four people or 23,53%.

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