

## Radiological Observations of Odontomas: 54 Cases

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**ABSTRACT:** In this study, it was aimed to evaluate the cases diagnosed with odontoma radiologically according to age, gender, localization and types. A total of 54 patients were included in this study that was diagnosed with odontoma radiologically. On the panoramic radiographs, odontomas were identified as upper and lower jaws according to their localizations, and complex and compound odontoma according to their types. When odontomas were evaluated according to their localizations, it was seen that 32 of the cases were in the upper jaws (59.3%) and 22 of them were in the lower jaws (40.7%). When evaluated according to their type, 41 of the 54 cases (75.9%) were found to be compound and 13 (24.1%) were found to be complex type of odontoma. When the types were evaluated according to their localizations; 3 of the cases in the upper jaws were complex (9.4%), and 29 of them were compound (90.6%); 10 of the cases in the lower jaws were found as complex (45.5%) and 12 of them were found as compound (54.5%) odontoma. Odontomas are more common in the upper jaws and compound types are more common than complex types.

**Key Words:** Complex, Compound, Odontoma

### I. INTRODUCTION

The World Health Organization classifies odontomas as odontogenic tumors composed of epithelium and odontogenic ectomesenchyme with or without mineralized dental tissue formation.[1] Odontomas are slow growing non-aggressive benign tumors.[2] Odontomas constitute approximately 22% of odontogenic tumors. It contains dental-like tissues such as enamel, dentin, cementum and pulp, which are considered to be largely hamartomas from neoplasms.[3] Odontomas are seen equally in maxilla and mandible. The maxillary anterior region is the most common localization.[4] Radiographically, there are surrounded by radiolucent borders and appear as radiopaque structures.[5]

Odontomas are divided two types including complex and compound odontoma. The compound odontoma resembles a tooth in size and shape. Complex odontomas are seen as an unorganized irregular mass.[4] Clinically, compound odontomas are two times more common than complex odontomas.[5] Complex odontomas are observed in the posterior of the jaws, whereas compound odontomas are observed in the anterior of the jaws.[4] In this study, 54 cases diagnosed as odontoma radiologically were examined according to age, gender, localization, region and types.

### II. MATERIAL AND METHOD

A total of 54 patients (23 males and 31 females) who were diagnosed as odontoma by radiologically were included in this study. The cases were analyzed in terms of age, gender, localization, region and types. On the panoramic radiographs, the localizations of the odontomas on the lower or upper jaw and complex or compounds type were determined. Localizations were also identified as anterior and posterior regions. The area between the canines was anterior region and posterior of canines was evaluated as the posterior region.

### III. RESULTS

The panoramic radiographs of 54 patients, 31 female, (57.4%) and 23 male (42.6%) were included in this study (Fig. 1). The age ranges of the patients ranged from 9 to 67 and the mean age was  $21.24 \pm 11.5$ . The ages of the women were minimum 9 and maximum 45 (mean  $21.23 \pm 8.8$ ), while the ages of the men were minimum 9 and maximum 67 (mean  $21.26 \pm 14.6$ ).

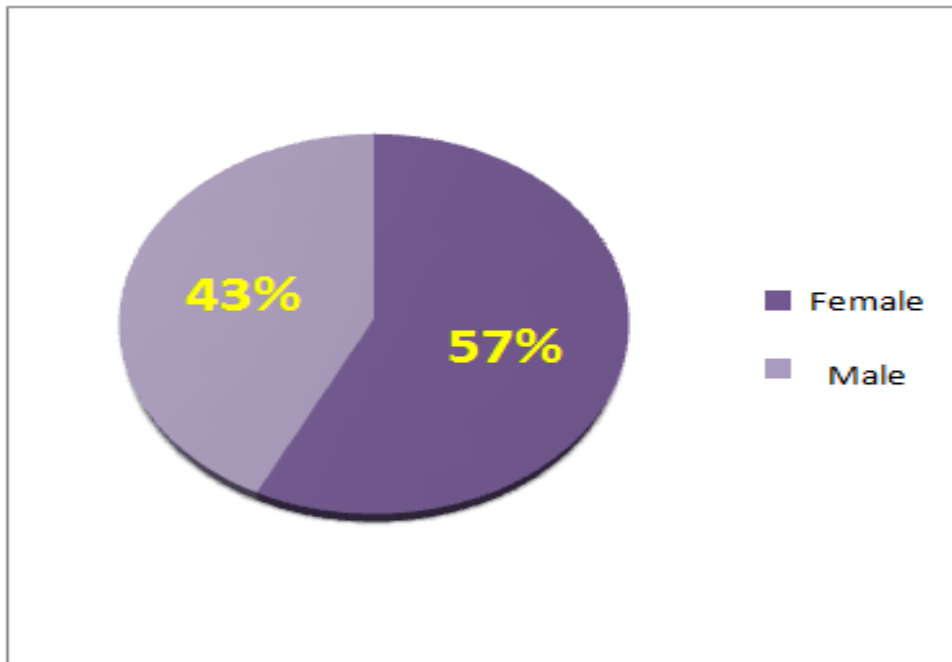


Figure 1: Distribution according to gender

When evaluated according to the localizations of odontomas, 32 cases of the odontomas were in the upper jaws (59.3%) and 22 cases of the odontomas were in the lower jaws (40.7%) (Fig. 2).

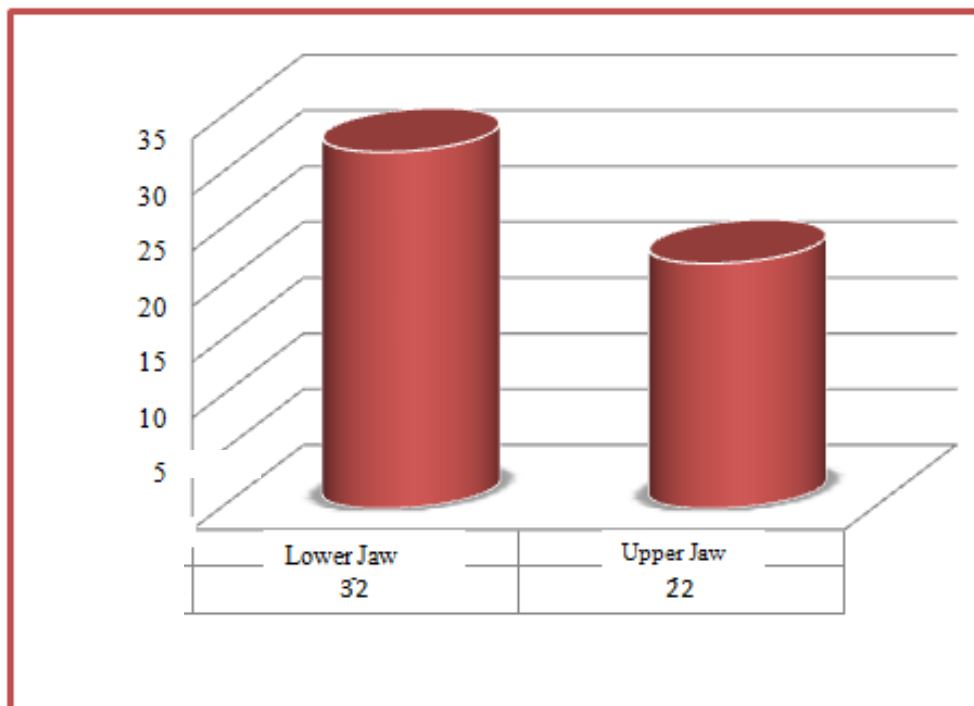
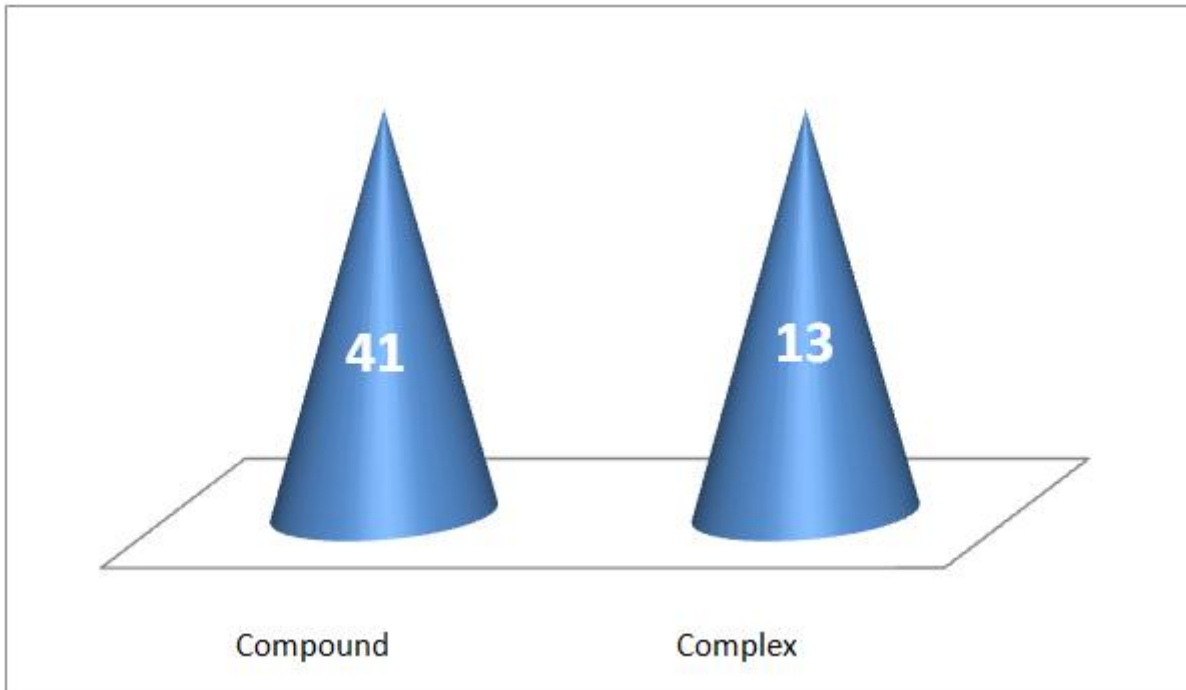


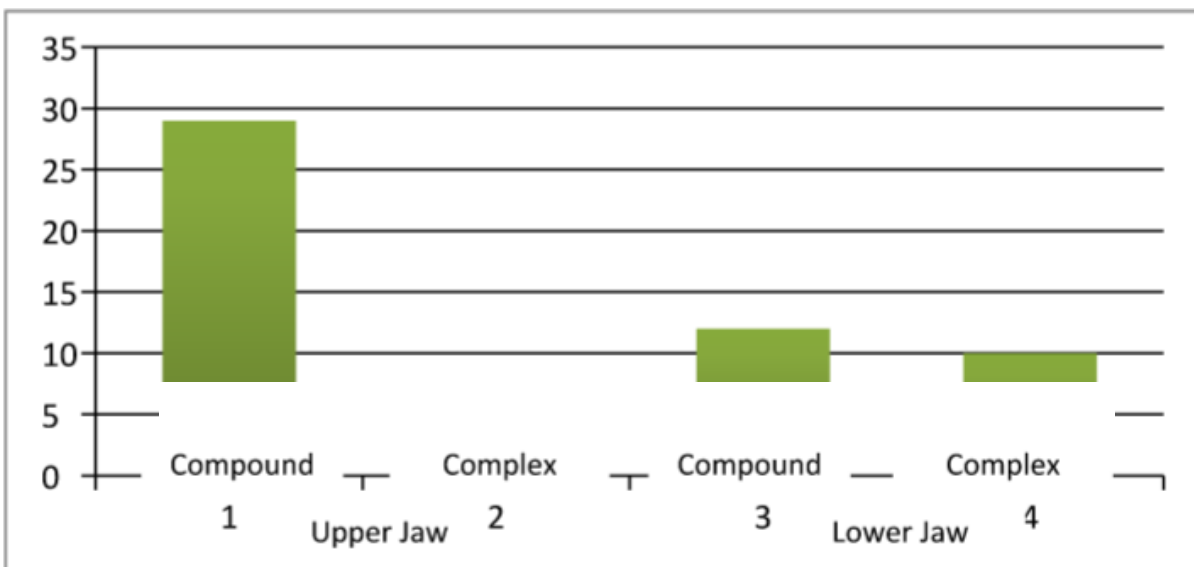
Figure 2: Distribution according to localizations

When evaluated according to the type, it was seen that 41 of the 54 cases (75.9%) were compound and 13 (24.1%) were the complex type of odontoma (Fig. 3).



**Figure 3:** Distribution according to type

When the types are evaluated according to their localizations; in total of 32 cases of odontomas were seen in the upper jaw, 3 complex (9.4%) and 29 compound odontoma (90.6%) were found; 10 of the 22 cases of odontomas were seen in the lower jaw, 10 complex (45.5%) and 12 compound (54.5%) odontomas were found (Fig. 4).



**Figure 4:** Distribution of the types according to localizations

When evaluated according to their regions; 32 cases were seen in the upper jaw, 25 (78.1%) were in the anterior region, 7 (21.9%) were in the posterior region; 14 of the 22 cases (63.6%) were found in the anterior region and 8 of them were in the posterior region (36.4%). It was seen that the most common areas were the upper jaw anterior region (25), lower jaw anterior region (14), lower jaw posterior region (8) and upper jaw posterior region (7). (Table1).

**Table 1:** Evaluation of odontomas according to their regions

	Anterior	Posterior	Total
Upper jaw	25 (78,1%)	7 (21,9%)	32
Lower jaw	14 (63,6%)	8 (36,4%)	22

When the localizations of odontomas were evaluated according to their types; 9 of the complex odontomas (69.2%) were in the anterior region and 4 of them (30.8%) were in the posterior region; 30 of the compound odontomas (73.2%) were in the anterior region and 11 of them (26.8%) were seen in the posterior region.

**Table 2:** Evaluation of odontoma types according to their regions

	Anterior	Posterior	Total
Complex	9 (69,2%)	4 (30,8%)	13
Compound	30 (73,2%)	11 (26,8%)	41

#### IV. DISCUSSION

Odontomas are usually non-aggressive benign odontogenic tumors with no symptoms.[6] Various factors have been associated with the pathogenesis of the odontomas. These factors are; trauma at primary dentin period, inherited anomalies such as Gardner's syndrome, hyperactivity of odontoblasts or changes in genetic components responsible for tooth development.[7]

More than half of the odontoma cases (57%) are diagnosed during routine radiological examination.[6] Differential diagnosis of odontomas; ameloblastic fibroma, ameloblastic fibro-odontoma, odontoameloblastoma, focal residual osteitis, cementoma, calcific epithelial odontogenic tumor, adenomatoid odontogenic tumor and benign osteoblastoma.[8]

Odontomas have been reported to be diagnosed before the age of 20, although it can be diagnosed at any age.[3] When our study was evaluated in terms of age in 54 cases; it was observed that the minimum age was 9 and maximum age was 67 and the mean was  $21.24 \pm 11.5$ . When we looked at the age average, we can say that the data we obtain is close to the literature.

The male / female ratio of complex odontomas ranges from 1.6: 1 to 1: 0.8 and the male / female ratio of compound odontomas ranges from 1.2: 1 to 1: 1. Although there are some differences in the male / female ratio reported in the literature, there is a general consensus that there is an equal gender incidence.[9] When the data in our study were evaluated in terms of gender, it was found that 31 of 54 patients were female (57.4%), 23 were male (42.6) and more frequent in female patients.

The most commonly reported localizations of odontomas are the anterior region between the upper jaw incisor and canine, followed by the lower jaw anterior region and the lower jaw posterior region. [10, 11] When evaluated according to the localizations of odontomas 32 cases (59.3%) were seen in the upper jaw and 22 cases (40.7%) were seen in the lower jaw in our study. 32 cases was seen in the upper jaw, 25 (78.1%) were in the anterior region and 7 (21.9%) were in the posterior region; 14 of the 22 cases (63.6%) were found in the anterior region and 8 of them were in the posterior region (36.4%). When odontomas were evaluated in terms of the regions where they were seen, it was found that the most common complaint was seen in the upper jaw anterior region, followed by the lower jaw anterior region, lower jaw posterior region and upper jaw posterior region in accordance with the literature.

Odontomas are classified as complex or compound type. In complex odontomas; enamel dentin and cement are scattered, while compound odontomas have various numbers dental-like structures.[12] Compound odontoma is more common than complex odontoma.[10, 11] When evaluated according to the types, it was seen that 41 of the 54 cases (75.9%) were compound and 13 of them (24.1%) were of the complex type odontomas and findings consistent with the literature were obtained.

Compound odontoma is more frequent (61%) in the vicinity of the coronal or extended roots of the teeth that have not been applied to the upper jaw anterior region, whereas complex odontoma is seen more common in the posterior region of the mandible (59%).[6, 13] In our study, when localizations of odontomas were evaluated according to their types, 9 of the complex odontomas (69.2%) were in the anterior region and 4 of them (30.8%) were in the posterior region; 30 of the compound odontomas were seen in the anterior region (73.2%) and 11 of them (26.8%) were seen in the posterior region. When we compared the data obtained with the literature, it was found that compound odontomas were seen more frequently in the anterior region and complex odontomas were seen more frequently in the posterior region.

## V. CONCLUSION

Odontomas are benign non-aggressive odontogenic tumors usually seen in young adults and diagnosed during routine radiological examination.

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