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PREVALENCE OF IMPACTED MAXILLARY CANINE TEETH & DENTIGEROUS CYST (A PROSPECTIVE STUDY)

Dental Science

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ABSTRACT

Objectives & Aims Canine impaction is one of the anomalies that should be considered by clinicians in detail. The aim of this study was to determine the incidence, prevalence, patterns & potential distribution of impacted maxillary canine teeth stratified by gender ,location (RT or LT) , unilateral or bilateral. This study also aims to evaluate the possible relationship between impacted Maxillary canines with large dentigerous cysts in maxilla

Methods The study was carried out in the department of Oral & Maxillofacial surgery .patients were referred from oral medicine, radiology department with the symptom of swelling, pain, discharge or missing canines & retained deciduous canines. After examination of panoramic radiographs & clinical symptoms diagnosis was made, associated symptoms like pain, swelling, number, localization (RT/LT) age & sex, retained deciduous teeth, root resorption of adjacent teeth was also noted

The included sample consisted of 100 patients diagnosed with canine impactions / transmigrated canines on clinical examination & panoramic radiographs. Age ranged from 18 to 50 years. 59.61% females 40.38% males. 60.22%maxilla,46.70% mandible.63.17% unilateral, 36.3% bilateral,.

Conclusion The early detection of impacted maxillary canine teeth is crucial for successful treatment, therefore demographic studies are important & should be managed to prevent complications.

KEYWORDS

Impacted teeth, Transmigrated canines, Dentigerous cysts, Root resorption

Introduction

Tooth impaction is a common dental condition frequently reported in the literature [1]. It was stated that when a tooth is unerupted more than 1 year after the normal age for eruption, it is then defined as "impacted" [2]. Dentist almost daily diagnose teeth that fails to erupt in oral cavity due to interference from gum ,bone or another teeth within specified time [3] .The prevalence of impacted teeth varies according to the population & is reported to be between 6,9& 76,6% . The most commonly impacted teeth were reported as third molars, maxillary canines, maxillary central incisors, & premolars[4].

Obviously canine play an important role in aesthetics & function in human dentition [5]. The incidence of canine impaction in particular range from 0.8-3.6% of general population[6].

Transmigration is defined as migration of impacted tooth crossing the midline to the opposite side of the arch. It is very rare condition than standard impaction cases typically affects the mandibular canines[7].The prevalence of transmigration in different population & ethnic groups was reported to be between 0.1-0.34% in several studies[8]. Although various terminology has been used to describe this condition, the term transmigration is commonly used by Joshi et al . [9] He considered that not the distance of migration after crossing the midline suture was important but the tendency of a canine to cross the barrier of mandibular midline suture was more important while Javaid et al [8] suggested that a tooth must be classified as transmigrated when more than half of length of root have crossed the midline .Mupparapu [10] stated that canines were considered transmigrated if the path of eruption had been altered & the tooth had drifted to the opposite side of mandible with at least half the crown length crossing the midline .

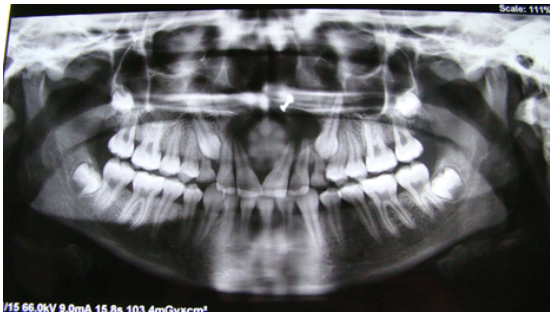
The aetiology impaction & of transmigration is still unclear various studies [11] stated that the transmigration occurred when tooth bud developed in abnormal site alter eruption path the aetiology of canine impaction is associated with several systemic & local factors. These factors may include early loss of the deciduous canine, or its prolonged retention, arch length deficiency. Supernumerary teeth, presence of pathologic lesion in the region, cleft lip & palate; less common causes are cleidocranial dysplasia Down syndrome febrile diseases[12].

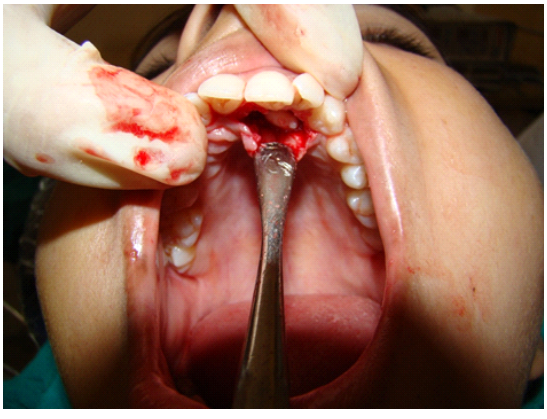
Materials & Methods

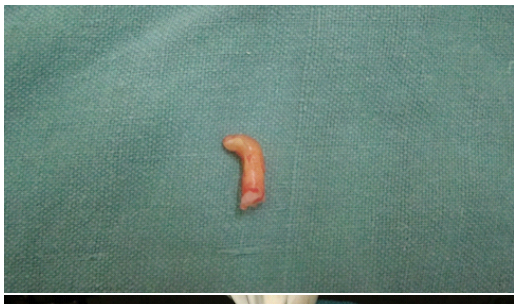
This prospective Study was conducted in the department of Oral & Maxillofacial Surgery. The included sample consisted of 100 patients diagnosed with impacted canines on clinical examination & panoramic radiographs. Age ranged from 18 to 50 years. signs & symptoms included

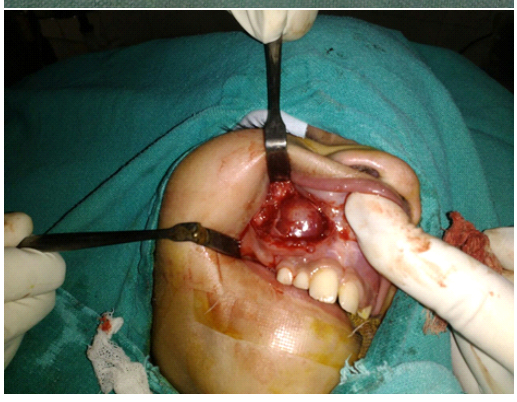
Prolonged retention of deciduous canine beyond 15 years of age
Delayed eruption of permanent canine canine teeth
Distal tipping or migration of lateral incisor
Swelling or facial deformity with or without discharge

Diagnosis was made on clinical & radiographic examination. After investigations & informed consent all impacted teeth were surgically removed along with enucleation, curattge, treatment of adjacent teeth was also done under local /general anesthesia. Sutures were removed after 7 days. Cystic lining& or granulation tissue was sent for histopathologic examination



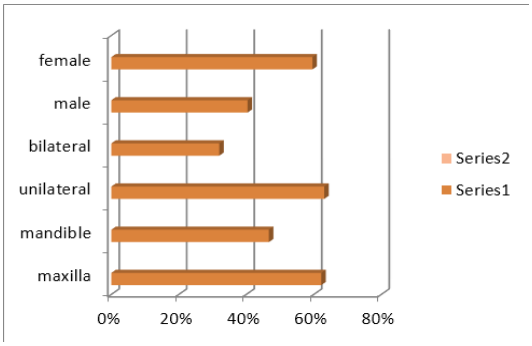




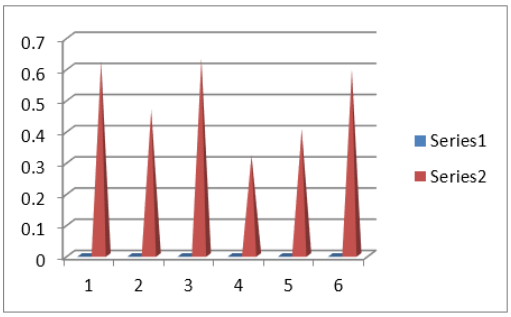


Results

The included sample consisted of 100 patients diagnosed with canine impactions canines on clinical examination & panoramic radiographs. Age ranged from 18 to 50 years. 59.61% females 40.38% males. 60.22%maxilla,46.70% mandible .63.17% unilateral, 36.3% bilateral. (bar graph 1) 54% were associated with dentigerous cysts & 46% were diagnosed on routine radiographic examination (bar graph 2)



Bar graph 1 showing location & age distribution of maxillary impacted canine



Bar graph 2 showing symptoms of maxillary canine

Discussion

Canine plays a very important role in functional occlusion ,appearance on the corner of mouth for aesthetic purpose, food tearing etc But because of eruption pattern & sequence canine are more prone to impaction & should be considered by the clinician in detail.

AS found in literature & because of eruption pattern & sequence canine are more prone to impaction & Maxillary canine are affected 20 times more frequently than mandibular canines as stated by Rohrer et al [13]. In the present study also 592 (60.22%) canine impaction were in maxilla &319 (46.7%) in mandible Chu et al [1] reported this ratio to be 6.14.

Few studies[13] in literature stated that impacted maxillary canine had not been observed migrating across the palatal midline suture .Only few cases of maxillary transmigrated teeth have been reported by other authors [6,14]. No case of transmigrated canine was seen in maxilla like in present study no case of transmigrated canine is reported in maxilla

Canine impaction was found more on left side than right as reported in studies by (Peck,1998;Mupparapu ,2002;Camilleri & Scerri, 2003; Shapira & Kuftinec ,2003;) In the present study same findings were noted 56.2% on left side, 43% right side impacted canines were reported

Females have been reported to have more impacted & transmigrated canines than males. our study also found more females having impacted canine teeth than males,586 was females &397 were males (59.61%, & 40.38%). . (Shapira & Kuftinec, 2003.) (Aydin et al 2004) found that males are more affected than females.

Unilateral migration of impacted canine is more common (Greenberg& Orlian, 1976; O Carroll, 1984; Broadway, 1987; Peck, 1988; Rabellato & Schabel,2003;Shapira & Kuftinec,2003:Auluck et al ., 2006, Buyukkurt et al 2007;Summer Et al ,2007)

Nodine (1943) & Ando et al (19664) reported that impacted canines often do not produce any apparent symptoms contrary to the present study all the impacted canine reported with symptoms like facial swelling, pus discharge, pain, cyst formation. the present study was in accordance with studies of teeth (Mupparapu ,2002 ; Gonzalez –Sanchez, 2007; Aydin U, Yilmaz, 2004; Peterson LJ Principles,1988; Peterson LJ;) who reported a No of patients complaining of pain, infection, cyst formation fistulisation,tumors,resorption of adjacent teeth.

The aetiology & exact mechanism with regard to transmigration is not clear, (Camilleri & Scerri, 2003). It has been suggested that canine transmigration is congenital (Peck, 1998). While Ando et al, (1964; Shapira, & Kuftinec,2003;)suggested possibility of transmigration may be due to retention or pre mature loss of primary teeth,crowding, spacing, supernumerary teeth & excessive crown length of mandibular & maxillary canines. Sometimes transmigration is a result of local pathology like cysts, tumours& odontomes.

Besides Tumours cysts & odontomes may cause malposition of teeth if they lie in the path of eruption.. Al –Waheidi (1996) suggested that canines were usually associated with a cystic lesion & that the presence of a cyst at crown of canine might facilitate migration process ..

Management options for impacted canine include surgical removal, transplantation; surgical exposure with orthodontic alignment

(Rabellato & Schabel, 2003).Surgical removal is more appropriate (Camilleri & Scerri, 2003). In the present study all the transmigrated & impacted canines were treated by surgical removal & treatment of associated pathology like enucleation of cystic lining, treatment of adjacent teeth etc. long term follow up was done to check the recurrence of pathology.

Conclusion

The early detection of impacted maxillary canine teeth is crucial for successful treatment, therefore demographic studies are important & canine impactions should be diagnosed & managed in early stages to prevent complications.

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