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Scientific Editorial

Bicuspidization of a mandibular left first permanent molar – A Case Report.

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ABSTRACT:

This article proposes to save teeth by multidisciplinary approach. In many cases the dentists consider replacing teeth, which otherwise could be saved. Grade III Furcation involved tooth may well be preserved partially by hemisection and as two separate teeth by bisection/bicuspidization.

Key Words: Bisection, Bicuspidization

INTRODUCTION

Advancements in dental treatment has inspired our patients to seek a more conservative dental treatment. “Repair is better than replacement” has gained a huge importance in our practices. In this case presentation it has been emphasized how a

multidisciplinary classical approach could help you save the natural tooth. Biicuspidization in grade III furcation involved teeth is a more conservative approach in selected cases as compared to Crown and bridge, and implants.²

CASE REPORT

A 35 year old male presented with a swelling in relation to the lower left permanent molar. On examination there was a periodontal abscess with a sinus opening in the lingual region. Radiographic examination revealed that the Class 3

furcation involvement .The root canal treatment which was done previously had radioluceny in the furcation are indicating severe bone loss. . After explaining the risks involved, it was decided to perform a tooth bicuspidization/bisection of the molar.



Fig 1: The Abscess with Sinus



Fig 2: The Sulcular Incision

PROCEDURE

Under Local anaesthesia, a sulcular incision was placed to reflect the flap. (Fig 2) The tooth was sectioned using a Carbide bur, followed by which the mesial surface of the distal section and the distal surface of the mesial section were carefully examined for any residual roots/lips or ledges. (Fig 3) The surfaces were thoroughly polished and sutures were placed. Care was taken to relieve the occlusion to facilitate the

healing.(Fig 4) Splinting was not required.² After 2 weeks the sutures were removed. Two months after the procedure the patient was called for an examination. Radiographically there was bone deposition in the region between the two fragments. Each of the two teeth were no restored with a NiCr full coverage crowns.(Fig 5) The case was followed up after six months and showed no radiographic changes.



Fig 3: After Bisection



Fig 4: relieved occlusion



Fig 5: Relieved occlusion

DISCUSSION

The furcation area can be divided into 3 parts: (1) the roof, (2) the surface immediately coronal to the root separation (flute), and (3) the area of root separation (Grant et al. 1988). Care should be taken that no lips/ledges are left that may further act as a nidus for bacteria. Farschian and Kaiser stated, success rate of bicuspidization depends on three factors

1. Stability of, and adequate bone support for, the individual tooth sections;
2. Absence of severe root fluting of the distal aspect of the mesial root or mesial aspect of the distal root;
3. Adequate separation of the mesial and distal roots, to enable the creation of an acceptable embrasure for effective oral hygiene. In this case although the obturation was not satisfactory in the

mesial root , as there was canal transportation in the mesiobuccal canal and short obturation in the mesiolingual canal ,

re-treatment was not attempted because there were no periapical changes.

CONCLUSION

With the advent of the implant systems, more and more clinicians are going the non-conservative way. Bicuspidization is one such procedure that may perhaps increase the longevity of the natural tooth as well as

the advantages of the Periodontal ligament on the dentition are restored. (The author wishes to inform the readers that this case was done in 2004/05)

REFERENCES:

1. Augsburger RA. Root amputations and hemisections. Gen . Dent 1976;24(3):35-8
 2. Farshchian F, Kaiser DA , Restoration of split Molar :Bicuspidization Am J Dent 1988;1(1):21-2
 3. Newell DH. The role of prosthodontics in restoring root resected molars : a study of 70 molar root resections
 4. Briggs PFA , Scott BJJ . Evidence based Dentistry : Endodontic Failure - how should it be managed? Br dent J 1997 :183: 159-164
 5. Staffileno HJ. Surgical treatment of Furca Invasion. DCNA 1969: 103 -119
 6. The relationship between restoration and furcation involvement on molar teeth ,
 7. J of Perio 64 , 302-305
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A rare case report of bilateral ectopic development of permanent second premolars

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ABSTRACT:

Ectopic development of tooth bud in the unusual position may create problems from both esthetic and functional points of view. Tooth transposition occurs when adjacent teeth switch positions. The maxillary permanent canine is the tooth most frequently involved, which is transposed most often with the first premolar followed by transposition between the maxillary permanent canine and maxillary lateral incisor. The following manuscript presents a rare case report of bilateral ectopic development of permanent second premolars in mandible and its treatment modalities.

Key-words: Tooth transposition, Ectopic eruption, developmental anomaly, permanent second premolar.

INTRODUCTION:

Tooth transposition is defined as a unique and extreme form of ectopic eruption in which a permanent tooth develops and erupts in the position normally occupied by another permanent tooth.¹ Transposition is confined to refer to an interchange in the position of two adjacent teeth within the same quadrant of the dental arch.²

“Transposition” is a disturbance of a tooth order and eruptive position resulting in a positional interchange of the two adjacent teeth (especially the root) or the development/eruption of a tooth in a position occupied by a non adjacent tooth.³

Broadway suggested that displacement of the crypt of the affected tooth is the cause.⁴ Bennet emphasized that a very small obstacle like a small root fragment would be sufficient to divert a tooth from its normal path of eruption.⁵

Transposition may be complete or incomplete. In complete transposition both crowns and entire root structures of the involved teeth are found in their transposed malposition. And in an incomplete transposition the crowns may be transposed, but the root apices still remain in their relative normal positions.^{6,7}

Transposition may affect both sexes equally and, although it may occur in the maxilla or in the mandible, the frequency of maxillary permanent canine involvement is the greatest. In the maxilla the canine is transposed most frequently with the first premolar, less often with the lateral incisor

followed rarely by central incisor or second premolar.⁸ In the mandible transposition is reported to involve the canine and lateral incisor only. A possible explanation for tooth transposition would be an exchange in position between developing tooth buds and also genetic or hereditary factor can play a role.⁹

CASE REPORT:

A 8 year old girl came to Department of Pedodontics, King Khalid University College of Dentistry for routine dental checkup. Clinical examination revealed that she had an initial caries in teeth 64, 65 and 75. The panoramic radiograph showed bilateral ectopic permanent second premolars tooth

buds below deciduous primary first molars along with permanent first premolar in mandible (Figure 1).

The bilateral occurrence of this anomaly in mandible is found to be unusual and has not been reported so far in pubmed search.



(Figure 1)

DISCUSSION:

Transposition is also associated with other dental anomalies, such as congenitally missing or peg-shaped maxillary lateral incisors, rotations and malpositions of the adjacent teeth, and retention of the deciduous canines. Unilateral transpositions are found more often than bilateral transpositions and show left side dominance.¹⁰

In this case, 8 years old child showed the developing tooth bud of the bilateral mandibular 2nd premolars presented an abnormal developing location below deciduous first molars rather in its usual position. This bilateral occurrence is very rare and treatment for such cases is timely radiographic follow up with extractions of primary molars and guidance for eruption of premolars. There are high chances of

ectopic eruption of these premolars due to their abnormal positions in the jaw. However, decision on surgical removal depends on the symptoms reported by the

patient, the site where the tooth is found, and presence or absence of associated pathologies.

CONCLUSION:

Early diagnosis and follow up of developing transposition is extremely important and has a great influence on prognosis. This may usually be performed by a radiographic examination when the patient is between 6 and 8 years of age. When the alteration is detected early, interceptive procedures

including extraction of deciduous teeth and placement of eruption guides for the permanent teeth may be performed, thus preventing complete development of the anomaly. Further report of such cases is needed to know its prevalence and treatment options.

REFERENCES

1. Shapira Y and Kuftinec MM. Maxillary canine-lateral incisor transposition. *Am J Ortho.* 1989 ; 95 : 5439 – 444
2. Filhoa LC, Cardosob MA, Anc TL and Bertozd FA. Maxillary Canine—First Premolar Transposition. Restoring Normal Tooth Order with Segmented Mechanics. *Angle Orthod.*2007; 77(1):167– 175.
3. Peck L, Peck S, Attia Y. Maxillary canine-first premolar transposition, associated dental anomalies and genetic basis. *Angle Orthod.* 1993; 63: 99-109.
4. Broadway RT. A misplaced mandibular permanent canine. *Br. Dent.J* 1987; 163: 357-358.
5. Bennett S. Prehistoric specimen- inverted canine in mandible of a chile. *Int. The Dental Record.* 1931; 138.
6. Yılmaz HH, Tu“rkkahraman H and O“ Sayın M. Prevalence of tooth transpositions and associated dental anomalies in a Turkish population. *Dentomaxillofacial Radiology.* 2005; 34: 32–35.
7. Sato K, Yokozeki M, Takagi T, Moriyama K. An Orthodontic Case of Transposition of the Upper Right Canine and First Premolar. *Angle Orthod* 2002; 72(3):275–278.
8. Filhoa LC, Cardosob MA, Anc TL and Bertozd FA. Maxillary Canine—First Premolar Transposition. Restoring Normal Tooth Order with Segmented Mechanics. *Angle Orthod.*2007; 77(1):167– 175.
9. Sato K, Yokozeki M, Takagi T, Moriyama K. An Orthodontic Case of Transposition of the Upper Right Canine and First Premolar. *Angle Orthod* 2002; 72(3):275–278.
10. Kavitha P.R, Vivek P, Bharati Lambha. Tooth transposition – a review. 2010;2(6):49-51

Gorlin Goltz Syndrome – A Case unearthed and Review of literature

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ABSTRACT

Gorlin Goltz Syndrome is an uncommon autosomal dominant inherited condition that exhibits high penetrance & variable expressivity. It is mainly characterized by basal cell carcinomas, recurrent odontogenic keratocyst & skeletal anomalies. However medical literature documents both common & lesser known manifestations of the disorder involving the skin, central nervous system, skeletal system etc,. Early diagnosis, treatment genetic counseling is essential. Here we report a 54 year old male patient, who presented with a swelling in the lower jaw. History revealed the presence of recurrent swellings in the jaws with surgical intervention for the same with histopathologically proved multiple odontogenic keratocyst. Further advanced investigations unveiled Gorlin Goltz syndrome.

CASE HISTORY

A male patient aged 54 years, reported with a swelling in the right lower face associated with pus discharge since one month. There was mild pain, but no paraesthesia. There was reduction in the size of the swelling after aspiration (fig-1), aspirant was pus.

Past history revealed surgical intervention of odontogenic keratocyst in his mandible Ssyndactyly & polydactyly of the right forrth & the fifth toe (fig-7) was noted.



Fig 1: Diffuse swelling and healing sinus.

Extra oral examination showed a gross asymmetry of face with a diffuse swelling about 1.5 cm in the right mandible. On palpation, swelling was mildly tender & soft in consistency. Mild prognathism of

mandible noted & presence of a healing sinus opening in the right parasymphiseal area measuring about 0.5 cm in size with central crusted area surrounded by hyperplastic area (fig-1).



Fig 2: Healed fibrous scar tissue.

Intra orally presence of fibrous scar tissue (fig-3) in the region of missing 43 & 44 region. Chronic suppurative osteomyelitis was the provisional diagnosis. Differential diagnoses of infected residual cyst, recurrent odontogenic keratocyst & cervicofacial actinomycosis was also considered.

RADIOLOGIC INVESTIGATIONS:

Intra Oral Periapical Radiography (IOPAR) revealed the presence of well defined radiolucency with sclerotic border (fig 3) in the mandibular incisor and right mandibular body. Light mandibular cross sectional

occlusal radiography (fig-3) revealed thinning of the cortical plates without any expansion, suggestive of a benign cystic lesion.

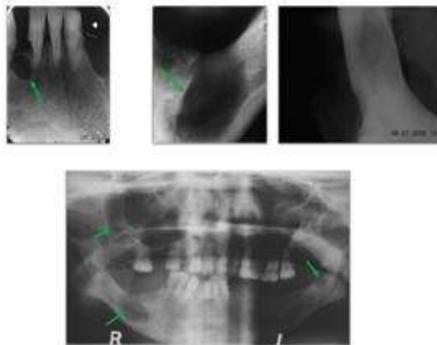


Fig 3: Radiographs showing multiple radiolucencies.

Panoramic radiography (OPG) revealed the presence of multiple radiolucencies (fig-3) in the mandible, Gonial notch was exaggerated on the right side. Mandibular canal could be traced bilaterally. Maxillary

sinus showed hyper-pneumatization bilaterally, with increased septation. Water's projection elucidated the hyperpneumatization of all the paranasal sinus (fig-5).



Fig 4: Lateral skull showing bridging of sella turcica & pneumatization of sinus & chest PA showing bifid rib.

P.A skull (fig-5) showed, falx calcification, copper beaten appearance of the skull & decrease in the width of the diploe. True lateral view of the skull (fig-4) revealed the increased A-P diameter of the skull with low

occiput, hyperpneumatized frontal and sphenoid sinus, bridging of sella turcica attributing to the calcification of the petroclinoid ligament.

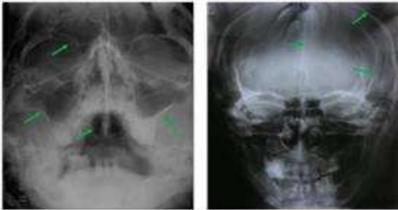


Fig 5: Water's view showing pnematization of PNS & PA skull showing Falx calcification.

Chest P.A view (fig-4) showed, kyphoscoliosis & the presence of bifid left fourth rib. P.A right foot (fig-7) showed the syndactyly & polydactyly of fourth & fifth

toes. CT coronal sections revealed hypodense areas in the mandible and falx calcification (fig 3, 4 & 5)

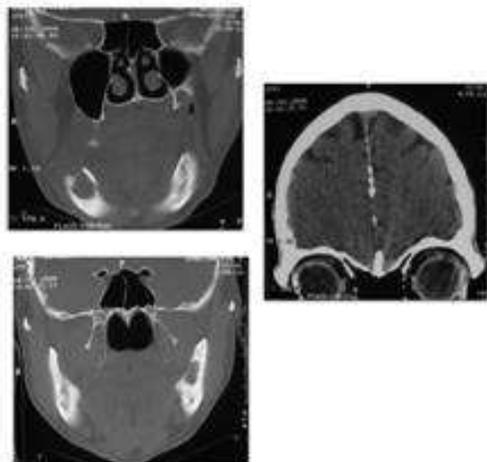


Fig 6: CT coronal sections showing radiolucencies & falx calcification.



Fig 7: Syndactyly & Polydactyly.

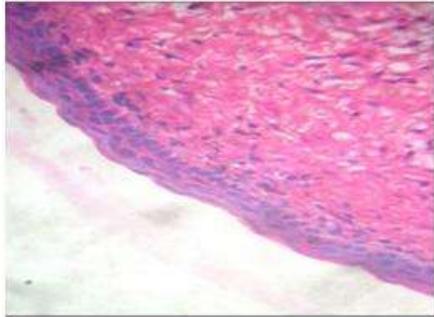


Fig 8: Pictomicrograph

Serum chemistry revealed elevated acid phosphatase level (total 9.0KAU; prostrate 3.0 KAU), the serum calcium, phosphorus & alkaline phosphatase were within normal limits. Enucleation with chemical cauterization of all the radiolucencies was

performed under general anesthesia. Histologically the diagnosis was confirmed as odontogenic keratocyst. Taking into consideration of all the above findings the final diagnosis was Gorlin Goltz Syndrome.

DISCUSSION:

Synonyms: Basal cell naevus bifid rib syndrome; Gorlins syndrome; Nevroid basal cell carcinoma syndrome; Multiple basal cell nevi syndrome. This syndrome was first reported by Jarisch and White in 1974. It was in 1960, Gorlin & Goltz described it as “true cysts having a typical stratified squamous epithelium & bifid ribs”¹. They also described the association of basal cell carcinomas, odontogenic keratocysts & bifid ribs. The syndrome shows an autosomal dominant pattern of inheritance with strong penetrance & variable expressivity. The estimated prevalence rate is 1 in 60,000¹. Recent molecular genetic studies have suggested that a mutation of a patched tumor suppressor gene (PCTH), a

human homologue of drosophila segment polarity gene mapped to chromosome 9q22.3 and has no apparent heterogeneity^{4, 9}. Approximately 50% of cases are associated with allelic losses at this site. The diagnostic criteria³ for Gorlin Goltz Syndrome was put forth by Evans and colleague and modified by Kimonis et al in 1997. According to him, diagnosis can be ascertained when two major and one minor criteria are present.

Table 1 Diagnostic criteria used for Gorlin Goltz Syndrome (by Kimonis et al)

<p>More than two BCCs or one BCC under the age of 20 years</p> <ul style="list-style-type: none"> • Odontogenic keratocysts of the jaw proven by histology • Three or more palmar or plantar pits • Lamellar calcification of the falx cerebri • Rib anomalies (bifid, synostosed, hypoplastic) • First degree relative with BCNS
<p>Minor Criteria: (any two of the following features):</p> <ul style="list-style-type: none"> • Macrocephaly determined after adjustment for height • Congenital malformations: cleft lip or palate, frontal bossing, “coarse face”, moderate or severe hypertelorism • Other skeletal abnormalities: marked pectus deformity, marked syndactyly of digits Radiological abnormalities: bridging of the sella turcica, vertebral anomalies such as hemivertebrae, fusion or elongation of the vertebral bodies, modelling defects of the hands and feet, or flame-shaped lucencies of hands or feet • Tumours: cardiac or ovarian fibroma, medulloblastoma, lymphomesenteric cyst BCC, basal cell carcinoma; BCNS, basal cell nevus syndrome

In the present case, three major criteria (odontogenic keratocyst proven histologically, falx cerebri calcification & bifid rib) and three minor criteria (bridging of sella turcica, scoliosis & syndactyly) have been satisfied. Mosskin et al described hyperpneumatization of paranasal sinuses as a manifestation of this syndrome. One of the most common intracranial abnormalities in Gorlin Goltz syndrome is lamellar calcification of falx cerebri (67%) [2, 10]. Calcifications have also been described in the tentorium, petroclinoid ligaments [5, 10], dura, pia, choroid plexus & basal ganglia. Odontogenic keratocyst associated with the syndrome have a higher

recurrence rate 10 (82%) as compared with that of solitary keratocysts (61%). It is believed that high recurrence rate of OKCs associated with Gorlin Goltz syndrome is due to the higher rate of proliferation of the epithelial lining. Thus the treatment of OKCs associated with the syndrome should consider the excision of the surface epithelium along with the cystic lining to prevent recurrences from the residual epithelial islands and micro cysts. The occurrence of multiple OKCs may be the first & the only manifestation of the syndrome [6]. The peak incidence of OKC associated with the syndrome is between the ages 21-30 years.

CONCLUSION:

In conclusion, a patient with Gorlin Goltz syndrome can present with multiple findings. Most of the times patients visit a dental hospital with a chief complaint of jaw swelling. Hence it is the responsibility of

the dental team to diagnose plan the treatment aptly. There should be periodic follow up at regular intervals of six months till five years followed by once annually for the entire life.

REFERENCES:

1. Syndromes of head & neck; 4th edition, Gorlin's.
2. Soji Iwanaga, Hisayoshi Shimoura, Michio Shimizu, Yuji Numaguchi. Gorlin Syndrome: Unusual

Manifestations in the Sella Turcica and the Sphenoidal Sinus-AJNR Am J Neuroradiol 19:956 – 958, May 1998 956

3. ZJ Sun, B Liu, Y F Zhao. Radiopacity in syndrome keratocystic odontogenic tumor Dentomaxillofac Radiol (2008) 37, 175-178
4. K Patil, VG Mahima, B Gupta. Gorlin syndrome J Indian soc Pedod Prevent Dent 2005;23:198-203.
5. Naveed Ahmed, Muhammad Salman, Muhammad Ayub Mansoor. Gorlin-Goltz Syndrome JCPSP 2007, Vol. 17(9): 568-569
6. Rai S, Gauba K. Jaw cyst-Basal cell nevus-Bifid rib syndrome J Indian soc Pedod Prevent Dent – September 2007,137-139.
7. Patricia Gonzalez-Alva, Akio Tanaka, Yuka Oku, Dai Yoshizawa, Shigeru Itoh, Hideaki Sakashita, et al. Keratocystic odontogenic tumor: a retrospective study of 183 cases; Journal of Oral Science(2008);50(2);205-212.
8. Ajit Auluck, Setty Suhas, Keerthilatha Pai: multiple odontogenic keratocysts: report of a case; JCDASeptember 2006,vol. 72, No.7
9. LU Yan, ZHU HAN-guang, YE Wei-min, ZHANG Ming-bin, HE Di and CHEN Wan-tao: a new mutation of a PCTH gene in a Chinese family with nevoid basal cell carcinoma syndrome; Chin Med J 2008;121(2);118-121
10. Rosalia Leonardi , Ersilia Barbato , Maurizio Vichi and Mario Caltabiano: A sella turcica bridge in subjects with dental anomalies; European Journal of Orthodontics 28 (2006) 580–585