

## Regional Odontodysplasia – A Rare Case Report

S. Aruleena Shaminey<sup>1</sup> Dr.G.V.Murali Gopika Manoharan<sup>2</sup>

<sup>1</sup>. Pg Student –Department Of Oral Medicine And Radiology,Tamilnadu Govt Dental College And Hospital,Chennai

<sup>2</sup>. Professor-Department Of Oral Medicine And Radiology,Tamilnadu Govt Dental College And Hospital ,Chennai

**Abstract:** Regional Odontodysplasia is a rare severe,non hereditary developmental anomaly with an unknown etiology.On radiographs affected teeth have an abnormal morphology,a hypoplastic crown and only a faint outline of hard tissue, a condition termed ghost teeth.This report describes the clinical and radiological findings of Regional Odontodysplasia.

**Keywords:** Regional odontodysplasia ,ghost teeth,delayed eruption.

### I. Introduction

Regional Odontodysplasia is an unusual developmental anomaly in which ectodermal and mesodermal tooth components affected<sup>1</sup>.

The first report of this condition was described by Mc.Call et al in 1947<sup>2</sup>,but the term Odontodysplasia was introduced by Zegarelli in 1963<sup>3</sup>.

In relation to the epidemiology of this pathology,Crawford and Alfred<sup>4</sup> stated that the age group of bigger prevalence is between the first and second decade of life without predilection of any racial group.In relation to the sex ,feminine is more frequently affected.Frequently, it is located only on one arch and the maxilla is involved twice often as mandible.Generally they are infrequent unilaterally.

The etiology is still unknown.Clinically affected teeth have an abnormal morphology and a rough surface with defective mineralization.The teeth appears to be discoloured, hypoplastic.Tooth eruption is delayed or does not occur.Radiological aspects show marked reduction of radiodensity and little demarcation between enamel and dentin.These teeth present wide pulp chambers and open apices.

### II. Case Report

A 10 year old male,Master.Tamilselvan reported to the Department of Oral medicine and Radiology ,Tamil Nadu Government Dental College and Hospital,Chennai,with a complaint of non eruption of some of his permanent teeth.No other symptoms were present.Past medical history,Past dental history,Personal history,family history were non contributory.

No facial asymmetry was noted on clinical extra oral examination(Figure 1).On local intraoral examination in the maxillary arch 11,12,16,21,22,26 erupted and 53,54,55,63,65 were present clinically(Figure 2).In the mandibular arch 37,46 erupted and 82,83,84,85,72 were present.Enamel was yellowish in colour and hypoplastic in 72,82,83(Figure 3)

On dental panoramic examination, maxillary dentition and right mandibular dentition were normal.The teeth in the left anterior and posterior mandibular region had thin radio opaque contours with no distinction between enamel and dentin and wide pulp chambers giving a ghost like appearance.The case was diagnosed as regional odontodysplasia based on clinical and radiographic findings.Patient was referred to Department of Pediatric and Preventive dentistry for further management.

### III. Discussion

Regional Odontodysplasia is often seen in both permanent and primary dentitions.The term “regional odontodysplasia” is the most widely employed yet other terms such as odontogenesis imperfecta,odontogenic dysplasia,nonhereditary amelogenesis imperfecta and ghost teeth are also found in the literature<sup>5</sup>.

The etiology of Regional Odontodysplasia is not well understood.It was not possible to identify the etiology in the present case. The literature mentions several hypotheses for the etiology of regional odontodysplasia such as trauma, local ischemia, viral infection, vascular defect, irradiation,vitamin deficiency, metabolic and nutritional disorders, Rh incompatibility,local somatic mutation, hyperpyrexia, manifestation of latent virus in the odontogenic epithelium, during dental development,genetic mutation of odontoblasts, premature degeneration of the enamel organ,and idiopathic factors<sup>6,7</sup>.The cause of the present case remains unknown because the patient’s past medical history was non contributory and no congenital or acquired diseases were reported.

Regional Odontodysplasia usually affects both the primary and permanent dentition, but in this case, the patient and his parents were unable to provide clear information on the patient's primary dentition history.

Generally the disorder is localized to one arch and maxilla involved twice as often as mandible<sup>7</sup>. However in this case the teeth demonstrating Regional Odontodysplasia were in the lower arch. In both the maxilla and mandible, central incisors, lateral incisors and canine are the teeth most commonly affected. In the case we presented in addition to incisors and canines, molars were involved, which makes the case more interesting. Interestingly this patient described in this report is a male, but Regional Odontodysplasia is known to be more prevalent in females<sup>8</sup>. Thus further study will be necessary to confirm this gender bias.

As in other disorders patients with regional odontodysplasia are more susceptible to dental caries and fractures. This anomaly is differentiated from amelogenesis imperfecta and dentinogenesis imperfecta because it appears unilaterally and is not generalized<sup>9</sup>.

Typical Regional Odontodysplasia features seen in this case include the delayed eruption of permanent teeth, absence of central incisors, lateral incisors, canines first molar in the affected segment and teeth with an unusual "ghost like" appearance. In general the treatment of regional odontodysplasia has esthetic and functional limitations. There are various ideas about the treatment of odontodysplasia. While a number of clinicians suggest that the affected teeth should be immediately extracted and dentures should be fabricated, some other clinicians recommend restorative procedures in an attempt to protect the affected teeth as soon as possible. Those who suggest the extraction of the teeth claim that the teeth affected become, most of the time, abscessed and painful, and defective enamel and dentin cannot be protected against bacterial invasion, as a result the risk of developing necrosis and facial cellulitis may be high in near future. Those who suggest restorative procedures recommend that the involved teeth should be restored and preserved in the mouth. Teeth with delayed eruption should be preserved in the mouth during skeletal growth. Severely damaged permanent teeth with pulpal involvement can be extracted and dentures can be fabricated<sup>10</sup>.

Based on above principles, patient has been advised to wait till the completion of skeletal growth and to report later for further management. We believe the affected teeth in these patients should be restored as much as possible and retained in the mouth. However severely damaged permanent teeth with pulpal involvement should be extracted and dentures fabricated, if necessary to provide function and esthetics for the patients.

The ideal treatment remains unknown given the lack of sufficient cases and case follow up in the current literature.

#### **IV. Conclusion**

This case reviews the unique clinical and radiographic features of Regional Odontodysplasia.

A complex multi disciplinary team is required to fully rehabilitate a patient affected by Regional Odontodysplasia.



**Figure 1** Extra oral photograph of the patient revealing no abnormalities



**Figure 2** Intra oral photograph of maxillary dentition showing no abnormalities



**Figure 3** Intraoral photograph of mandibular dentition showing hypoplastic crowns 82 83 72 and clinically missing anterior and posterior teeth in left quadrant ,and only anterior teeth in right quadrant



**Figure 4** Panoramic image of the patient showing thin radio opaque contours and no distinction between enamel and dentin in mandibular dentition on left side and right side anteriors

### References

- [1]. Cabral AG ,CarvalhoYR ,Moraes E,Nogueira T O,Cavalcante A S R,Moraes L C.Regional Odontodysplasia: a report of 3 cases.*Quintessence Int* 1994;25:141-145
- [2]. McCall J O Wall S.S *Clinical dental roentology*,3<sup>rd</sup> edition .Philadelphia:W B Saunders,1952
- [3]. Zegarelli E V,KutscherA H,Applebaum E, Archard H O.Odontodysplasia.*Oral surg Oral med Oral Pathol* 1963;16:187-193.
- [4]. Rushton(1965) Odontodysplasia ghost teeth.*British dental journal* ,119,109-113.
- [5]. Redman,R S;Cohen I.M.:GRE, R.O.Focal odontogenesis of the maxillary second premolars in a child.*Oral Surgery v* 47,n.4.p349-353,1979
- [6]. Aleva et al 1996,Neupert : E A WRIGHT J . M Regional odontodysplasia presenting as soft tissue swelling,*Oral Surgery ,Oral Medicine,Oral Pathology*,v 67,n 2,p 193-196,1989
- [7]. VolpatoL,Botelho G,Casela L,Borges A,Silva K.Regional odontodysplasia : a report of a case in the mandible crossing the midline.*J Contemp Dent Pract* 2008 :9:142-8
- [8]. Fanibunda ,K B SoamesJ V Odontodysplasia,gingival manifestations and accompanying abnormalities.*Oral Surg Oral Med Oral Pathol Oral Radiol* 1996;81:84-88
- [9]. Pandis, N Polido .C;Bell.W.H.Regional Odontodysplasia – a case associated asymmetric maxillary and mandibular development.*Oral Surgery,Oral Medicine,Oral Pathology*.v 72,n.4,p,492-496,1991
- [10]. White SC Pharoah MJ *Oral Radiology;Principles and Interpretation*4 th edition C V Mosby Co:St.Louis;2000:349.