

## **Overdenture with Access Post System of an Ectodermal Dysplasia: A Case Report**

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**Abstract:** Ectodermal dysplasia is a genetic disorder in which there are congenital birth abnormalities of 2 or more ectodermal structures. The treatment options for patient with ectodermal dysplasia varies depending on the age, degree of malformation of teeth, no of teeth present and the growth and development of the stomatognathic system. This case report discusses the prosthodontics rehabilitation of young patient with ectodermal dysplasia with acces post over denture .

**Keywords-** Access post system, Ectodermal Dysplasia, Prosthetic rehabilitation, Overdenture.

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### **I. Introduction**

The National Foundation for Ectodermal Dysplasia (NFED) defines ectodermal dysplasia (ED) as a genetic disorder in which there are congenital birth defects of 2 or more ectodermal structures. The structures may include skin, hair, nails, teeth, nerve cells, sweat glands, parts of the eye and ear.<sup>1</sup> More than 150 different variants of Ectodermal dysplasia have been described.<sup>2</sup>

Hypohidrotic and hidrotic are the two forms of Ectodermal dysplasia. In both types teeth and hair are similarly affected but manifestations in nails and sweat glands and the hereditary pattern tend to differ.<sup>3</sup> The X linked hypohidrotic form or Christ Siemens syndrome is characterized by clinical triad of hypohidrosis, hypotrichosis and hypodontia. Hidrotic form is inherited as an autosomal dominant trait and affects teeth, hair and nails but usually spares the sweat glands.<sup>4</sup>

The prosthodontics rehabilitation of patients suffering from ED depends on anodontia or hypodontia. In complete anodontia, the treatment would be conventional/implant supported complete dentures. In patients with partial anodontia, removable/fixed partial dentures and overdentures may be considered. In this present case, an access post system overdenture was the treatment of choice; the objective was to preserve the remaining residual ridge and to restore the lost function and esthetics.

### **II. Case History**

A 16-year-old female patient reported to the Department of Prosthodontics with the chief complaint of missing teeth. Family history of Ectodermal dysplasia was negative. The patient was moderately built with hypotrichosis, scarce eyebrows (Fig. 1). Intraoral examination revealed presence of 11, 21 and 13 and 24 in the maxillary arch and 33 and 43 in the mandibular arch . The edentulous ridge was atrophic with decreased height. The palate was shallow, oral mucosa was normal and dry due to less saliva.

A treatment protocol was planned which involved oral prophylaxis followed by root canal treatment of the remaining teeth and final prosthetic phase included access post retained overdenture. The treatment plan was explained to the patient and an informed consent was obtained from the patient.

Access post system are the ball and socket attachment which allows rotation of the denture attachment. Thick-walled, hollow tube design which provides strength of solid shank post. Nylon cap provides 3 to 5 pounds of retention and is easily replaced at low cost within office procedure.

#### **Treatment Procedure**

**Step 1:** Post space preparation: Tooth were reduced to about 1mm above gingival margin. Post length was measured against undistorted intra oral peri-apical radiograph, leaving 3-5mm of gutta percha. Gutta percha was removed with Peeso reamer. Primary reamer was used to prepare full length of post. Countersink drill was used to create flange & second tier preparations. Trial insertion of access posts (Essential dental system{EDS}) was done to determine their fit. To adjust post length, apical end was cut to ensure full seating of flange.

**Step 2:** Post cementation: The canal was etched and luted with resin cement using lentulo-spiral. Post was coated with resin cement and placed in canal till the flange & secondary tiers were fully seated. Excess cement removed (Fig 2 and Fig 3).

**Step 3:** Denture fabrication: Primary impression was made with alginate and a custom tray was fabricated. Secondary impressions were made with medium body addition silicone. Jaw relations were recorded and teeth arrangement was done. Try-in was done and the denture was processed in a conventional manner.

**Step 4:** Incorporation of Nylon caps in denture: Rubber bands were placed to cover the height of contour of the ball of post. Female caps were placed on the post. Denture was seated in place and chairside reliner was allowed to set followed by removal of the denture with attachment cap (Fig 4). Rubber bands were removed & flash was trimmed. The denture was adjusted and equilibrated. Post insertion instructions were given along with a recall appointment. (Fig 5)



**Figure 1. Pre treatment extra oral view**



**Figure 2.and 3 Prepared abutment teeth, cemented with access post**



**Figure 4. Denture with nylon cap**



**Figure 5. Post treatment extra oral view**

### **III. Discussion**

Treating the patient with ectodermal dysplasia requires the clinician to be knowledgeable in growth and development, behavioral management, techniques in the fabrication of prosthesis. <sup>5</sup>Treatment options varies depending on the age, degree of malformation of teeth, the growth and development of the stomatognathic system. It is important to provide early prosthodontic treatment to replace missing teeth and to restore vertical dimension of occlusion. Because of early-age intervention and the need to easily modify the intraoral prosthesis during rapid-growth periods a removable partial denture or complete denture prosthesis is indicated. This treatment protocol affords the ED patient an easy, affordable method of dental rehabilitation.

Access posts are stud attachments and are the simplest of all the attachments used for overdentures. They occupy a small vertical space and the male units on the different roots do not require parallelism. The ball and socket attachment which allows rotation of the denture and stabilizing flanges dissipate functional stresses and easy retreat ability.<sup>5-6</sup>

#### **IV. Summary**

This clinical report describes the types, characteristic features and treatment options for a young patient with ectodermal dysplasia. And the prosthodontic rehabilitation with access post overdenture with the philosophy to preserve the remaining residual ridge and to restore the esthetic and function of the missing structure.

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