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PROSTHETIC REHABILITATION IN A PATIENT WITH HEREDITARY ECTODERMAL DYSPLASIA AND PARTIAL ANODONTIA: A CLINICAL CASE

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Abstract: Ectodermal dysplasias are a group of more than 150 syndromes characterized by abnormalities in the development and function of tissues derived from the ectoderm, primarily affecting hair, nails, teeth, and sweat glands. Dental manifestations may include complete anodontia of primary or permanent teeth, often with a conical shape.

This clinical case presents the typical dental anomalies associated with ectodermal dysplasia in an 11-year-old patient, as well as the challenges of restoring aesthetics and function using removable prostheses.

Introduction

In ectodermal dysplasia, the development of the maxilla and mandible occurs independently and they usually reach normal size and shape. However, the absence of sweat glands is not a common symptom, and most patients do not complain of dry mouth. The condition may present as an anhidrotic form, associated with underdevelopment of the sweat glands, leading to dry skin, fine wrinkles, and increased pigmentation around the eyes and mouth.

Materials and Methods

The clinical case was observed at the Department of Orthodontics and Prosthetic Dentistry of Tashkent Medical University.
The patient — an 11-year-old boy — presented with complaints of missing teeth in the lower jaw and abnormal tooth shape in the upper jaw.

Clinical findings included signs of hereditary ectodermal dysplasia: hypohidrosis, thin scalp hair and eyebrows, dry skin, and cracks in the corners of the mouth. Family history was significant (similar signs in a maternal relative).

Diagnostics included:

- Clinical examination of the oral cavity
- Photographic protocol
- Orthopantomogram and targeted radiographs
- Alginate impressions and fabrication of diagnostic models

Treatment included:

- Preparation and restoration of central incisors (teeth 11 and 21) with composite veneers
- Fabrication of a metal-ceramic crown on tooth 16

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- Planning a partial removable denture for the lower jaw using the crown on tooth 16 as an abutment

The patient was followed up for one year; prosthesis adjustments and adaptation assessments were conducted. Informed consent was obtained from the patient's mother for all treatment stages and use of clinical data in scientific work.

Results and Discussion

A partial removable denture for the upper jaw and a complete removable denture for the lower jaw were fabricated and successfully delivered. The diagnosis of hereditary ectodermal dysplasia was confirmed based on history and clinical findings.

The primary goal in treating patients with ectodermal dysplasia is to restore an appearance close to normal, which contributes to improving the patient's psychological well-being. Partial or complete anodontia is common in patients with this condition. In this case, the patient had no primary teeth.

Treatment can begin at an early age, as children usually cooperate well with the dentist. A key challenge in prosthetic treatment is ensuring stability and retention of the dentures, especially given the presence of an active tongue, which tends to move laterally due to the absence of teeth. To address this, the Boucher impression technique was used, which provided reliable tissue compression and close adaptation.

Conclusion

Ectodermal dysplasia significantly impacts both the physical and emotional state of affected patients. Timely prosthetic treatment with removable appliances at an early age can greatly enhance the quality of life and social integration of these patients. Early initiation of treatment is important to support the child's social interactions and emotional development.

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