TIBBIYOT
TA'LIMI & INNOVATSIYALARI

TOSHKENT DAVLAT TIBBIYOT UNIVERSITETI
TASHKENT STATE MEDICAL UNIVERSITY
19 20

- 14.00.00 - Tibbiyot fanlari;
- 14.00.01 - Akusherlik va ginekologiya;
- 14.00.02 - Morfologiya;
- 14.00.03 - Endokrinologiya;
- 14.00.04 - Otorinolaringologiya;
- 14.00.05 - Ichki kasalliklar;
- 14.00.06 - Kardiologiya;
- 14.00.07 - Gigiena;
- 14.00.08 - Oftal'mologiya;
- 14.00.09 - Pediatriya;
- 14.00.10 - Yuqumli kasalliklar;
- 14.00.11 - Dermatologiya va venerologiya;
- 14.00.12 - Tibbiy reabilitologiya;
- 14.00.13 - Nevrologiya;
- 14.00.14 - Onkologiya;
- 14.00.15 - Patologik anatomiya;
- 14.00.16 - Normal va patologik fiziologiya;
- 14.00.17 - Farmakologiya va klinik farmakologiya;
- 14.00.18 - Psixiatriya va narkologiya;
- 14.00.19 - Klinik radiologiya;
- 14.00.20 - Tibbiy genetika;
- 14.00.21 - Stomatologiya;
- 14.00.22 - Travmatologiya va ortopediya;
- 14.00.23 - Hamshiralik ishini tashkil etish;
- 14.00.24 - Sud tibbiyoti;
- 14.00.27 - Xirurgiya;
- 14.00.28 - Neyroxirurgiya;
- 14.00.41 - Xalq tabobati;
- 14.00.35 - Bolalar xirurgiyasi;
- 14.00.34 - Yurak-qon tomir xirurgiyasi

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2026-yil, yanvar

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MUNDARIJA

CHARACTERISTICS OF ORAL FLUID BIOCHEMISTRY AND PHYSICAL CHEMISTRY IN CHILDREN WITH ABNORMALITIES FOLLOWING URANOPLASTY

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Abstract: To contrast the physico-chemical and biochemical characteristics of oral fluid between a control group of healthy children and those who have residual abnormalities after uranoplasty for congenital cleft palate.

The research included 50 children of the same age who were virtually sound and 109 children between the ages of 6 and 12 who had congenital cleft palates and residual abnormalities after uranoplasty.

Results and discussion. Significant physicochemical and biochemical abnormalities were seen in the oral fluid of infants with congenital cleft palate and residual problems that emerged during uranoplasty.

Additionally, these data provide the basis for future research and development of techniques aimed at improving the composition of oral fluid.

Key words: congenital cleft palate, surgical palate malformation, salivation, gingivitis, and intraoral fluid biochemistry.

Annotatsiya: Sog‘lom bolalarning nazorat guruhi va tug‘ma tanglay yorig‘i uchun uranoplastikadan keyin qoldiq anomaliyalari bo‘lganlar o‘rtasida og‘iz suyuqligining fizik-kimyoviy va biokimyoviy xususiyatlarini taqqoslash.

Tadqiqotga deyarli sog‘lom bo‘lgan bir xil yoshdagi 50 ta bola va uranoplastikadan keyin tug‘ma tanglay yorig‘i va qoldiq anomaliyalari bo‘lgan 6 yoshdan 12 yoshgacha bo‘lgan 109 ta bola kiritilgan.

Natijalar va muhokama. Tug‘ma tanglay yorig‘i va uranoplastika paytida paydo bo‘lgan qoldiq muammolari bo‘lgan chaqaloqlarning og‘iz suyuqligida sezilarli fizik-kimyoviy va biokimyoviy anomaliyalar kuzatildi.

Bundan tashqari, ushbu ma'lumotlar og‘iz suyuqligi tarkibini yaxshilashga qaratilgan kelajakdagi tadqiqotlar va texnikalarni ishlab chiqish uchun asos yaratadi.

Kalit so‘zlar: tug‘ma tanglay yorig‘i, jarrohlik tanglay malformatsiyasi, so‘lak oqishi, gingivit va og‘iz ichidagi suyuqlik biokimyosi.

Аннотация: Целью исследования было сравнение физико-химических и биохимических характеристик ротовой жидкости у контрольной группы здоровых детей и детей с остаточными аномалиями после уранопластики по поводу врожденной расщелины нёба.

В исследовании приняли участие 50 детей одного возраста, практически здоровых, и 109 детей в возрасте от 6 до 12 лет с врожденной расщелиной нёба и остаточными аномалиями после уранопластики.

Результаты и обсуждение. У младенцев с врожденной расщелиной нёба и остаточными проблемами, возникшими во время уранопластики, были выявлены значительные физико-химические и биохимические отклонения в ротовой жидкости.

Кроме того, эти данные служат основой для будущих исследований и разработки методов, направленных на улучшение состава ротовой жидкости.

Ключевые слова: врожденная расщелина нёба, хирургическая деформация нёба, слюноотделение, гингивит, биохимия ротовой жидкости.

INRTODUCTION

The presence of communication between the oral and nasal cavities, postoperative scarring changes, pathological bacterial contamination, crowding of teeth, and a high prevalence of dental caries and periodontal diseases were the main reasons for examining the oral fluid composition in children with congenital cleft palate and residual defects following uranoplasty.

LITERATURE REVIEW

Studying and improving our knowledge of the immune system and its constituent parts is becoming more and more important. The biochemical and immunological state of the oral cavity is significantly altered by chronic inflammatory periodontal disorders and related chronic illnesses [1–5]. It is possible to evaluate the kind of inflammatory responses and the kinetics of the response to therapeutic treatments by looking into the immunological properties of bioactive bodily fluids [6–11]. Nevertheless, despite the body of available literature, little is known about the immune defense mechanisms in children's oral cavities, especially those with cleft palates [12–20]. The lack of a barrier between the nasal route and the mouth cavity is a characteristic of children born with cleft palates. Early infancy for these children is often associated with a risk of unsatisfactory surgical results during corrective treatments because of an increased susceptibility to somatic and dental disorders. Postoperative problems may occur in 18% to 30% of individuals receiving primary uranoplasty (surgery to repair congenital palatal abnormalities) [23, 24]. The particular of congenital defects—a lack of native palatal tissue, muscle fiber weakening, and compromised healing processes—are to blame for this. Incomplete wound healing and the development of palatal perforation are the most frequent complications in these situations. Restoring the integrity of the velopharyngeal ring, which is crucial for early childhood speech therapy, is the main objective of primary palate cosmetic surgery.

There is disagreement among maxillofacial surgery doctors over the best course of action for treating infants with congenital cleft palates surgically. While some surgeons advocate for a single-stage uranoplasty starting at age two, others suggest a two-stage approach that involves cosmetic surgery of the front palate as the upper jaw grows after the velopharyngeal ring is restored early. Air and nasal secretions enter the mouth as a consequence of palatal abnormalities in the front portion that are common in children. Pathogenic microorganisms from the nasal cavity may colonize the oral cavity as a result of this favorable environment. Children's caries and periodontal disease are exacerbated by the lack of a natural border between the mouth and nose, which lowers saliva's remineralizing ability [1–3, 12, 23–24].

The important role cytokines play in the emergence of inflammatory responses in periodontal tissues is highlighted by a number of research. Pathogenic dental plaque is the first element that sets off the cascade of events that results in the generation of pro-inflammatory cytokines and the activation of periodontal macrophages [1–7, 10–20]. While anti-inflammatory cytokines (IL-4, IL-10) aid in containing the inflammatory process, a rise in the concentration of pro-inflammatory cytokines (IL-1β, IL-6, TNF-α) damages periodontal tissues. The diagnosis of inflammatory diseases is greatly aided by changes in the cytokine composition of oral fluid [1–7, 10–20].

Saliva typically includes a combination of immunoactive substances, including as lysozyme, immunoglobulins, antimicrobial peptides, lactoferrin, and others, that maintain the equilibrium of oral mucosal immunity. The most sensitive indicator of immunological alterations in the oral cavity is secretory immunoglobulin A (sIgA), which is released into saliva. With its great biological activity, this protein serves a variety of defensive purposes. It stops bacterial cells and their toxins from adhering to the mucous membrane by binding them. Additionally, it inhibits the passage of viral particles into the circulation and affects their absorption and reproduction in mucosal cells.

Research has shown a statistically significant decrease in the content of sIgA in saliva in children with severe caries and inflammatory periodontal illnesses. Previous studies have looked at sIgA levels in children of different ages who have congenital cleft palates [1–3, 12]. A notable tendency toward decreasing sIgA concentrations was shown by their investigation. In moderate chronic generalized periodontitis, there is a notable rise in sIgA, surpassing control group values by 1.5 times. This implies that sIgA levels in inflammatory periodontal disorders might vary. In contrast, this parameter falls by 1.5 and 3 times in moderate and severe periodontitis as compared to the control. The main immunoglobulin in saliva, sIgA, actively contributes to the defense against germs by aggregating them and preventing their proliferation, which explains this impact. sIgA production first increases with the severity of periodontal disease, suggesting a defensive reaction to the inflammation. On the other hand, moderate to severe instances result in an imbalance between inflammatory and anti-inflammatory responses due to the suppression of local immunity [1–3, 7, 12, 13, 17–19]. In this regard, it is crucial to recognize the physical relationship between the nasal and oral cavities, as well as the existence of pathogenic microflora in the mouth cavity and surgical scars, all of which may affect how the illness develops.

RESEARCH METHODOLOGY

This article presents the findings of an examination of the composition of oral fluid in 50 children of comparable age who were virtually healthy and 109 children aged 6 to 12 who had congenital cleft palate after uranoplasty and residual abnormalities. The main group includes the diagnosis of nonsyndromal congenital cleft lip, alveolar process, soft and hard palate, the state after uranoplasty and cheilorhinoplasty (in the case of cleft lip), and the existence of a postoperative palate defect at least six months after uranoplasty. The consent of parents or legal representatives to take part in the research was also taken into account, as was the lack of flare-ups of infectious or chronic illnesses. evaluation of the combined saliva's pH. Viscosity (μ). Salivary secretion rate (milliliters per minute) when not stimulated.

ANALYSIS AND RESULTS

Examination Saliva viscosity was 1.06±0.073 mm²×s in the control group and 2.43±0.137 mm²×s in babies with congenital cleft palates and residual abnormalities. This change indicates that saliva's mineralizing capability has diminished and its purifying qualities have degraded in the cleft group. Children with cleft palates had saliva with a pH of 6.47±0.067, while healthy children had saliva with a pH of 7.24±0.058. In children with cleft palate, a lower pH indicates a decreased ability of saliva to mineralize, which in turn promotes the development of carious processes and periodontal diseases. Children with congenital cleft palates with remaining abnormalities had a salivation rate of 0.28±0.039 ml/min, compared to 0.44±0.054 ml/min in healthy children. Children with congenital cleft palate and residual abnormalities had a lower protein level (0.851±0.535 g/L) than children in the healthy group (1.68±0.519 g/L). Normal levels of calcium and phosphorus in saliva help to preserve dental hard tissues by preventing their breakdown and supplying the essential ions on a regular basis.

CONCLUSION AND DISCUSSION

Anomalies in the physicochemical and biochemical parameters of oral fluid are seen in infants with congenital cleft palate and residual problems after uranoplasty. This study demonstrates that babies with congenital cleft palates and residual defects after uranoplasty have a substantial disruption of the physicochemical and biochemical equilibrium of the oral fluid. The complex environment caused by surgical scars, altered microbial colonization, and the anatomical linkage between the oral and nose canals compromises local defense mechanisms.Comparing the oral environment of the study group to that of healthy controls, our findings reveal many notable changes:A large increase in salivary viscosity (2.43 pm 0.137 mm 2 times) and a reduction in salivary flow rate (0.28 pm 0.039 mlmin) indicate that saliva's self-cleaning and lubricating properties have declined.

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