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Perspective

Is outcome based cleft research leading somewhere?

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Globally, approximately one out of every 700 live-births is affected by a cleft lip and/or palate. This occurrence rate makes it one of the most common congenital orofacial birth defect. The literature on this subject indicates that the cleft lip and palate has a multifactorial origin, but both genetics and environmental factors play a vital role and have been extensively studied individually and in conjunction. A multidisciplinary involvement of healthcare professionals is absolutely necessary to successfully manage and treat cleft lip and palate, and primary surgical repairs are required to restore function and structure. Clinical management is a result of sound clinical diagnosis and a predictable treatment outcome measures.

Extensive research has been and is currently being carried out to predict the treatment outcomes of unilateral cleft lip and palate (UCLP) cases based on specific indices available. Many practitioners have documented the use of different indices in different ethnic populations. Only a few failed attempts have been made to form a descriptive rather than a categorical scale. It is necessary to assess the treatment outcomes of the currently practiced primary surgical repairs under the influence of congenital and post-natal factors. Audits can be performed to assess their effect on growth and association of these confounding factors.

Dentoalveolar relationships have been extensively used to assess the treatment outcome for which many indices have been developed based on different planes of growth. In 1972, Huddart and Bodenham[1] formulated an index based on occlusal relationship in a transverse plane to form a descriptive prediction by cumulative scoring. In 1987, Mars *et al.*,[2] developed the GOSLON index which gave a categorical prediction based mainly on sagittal arch relationships. In 1997, Atack introduced the 5-years old index, which attempted to assess UCLP patients in a sagittal plane, at an age of five to remove operator and secondary treatment bias, alveolar bone grafts, and orthodontic interventions.[3]

Despite all these efforts, practitioners are still widely using the older indices with poor description of outcomes and lack of multi-planar growth considerations. In a recent study, 273 articles reported use of the GOSLON index, 43 articles used the 5-years old index, and only 24 articles used a modified Huddart and Bodenham scoring.[1,] No database of cleft lip and palate has been established. Several articles have determined the distribution of favourable/unfavourable treatment outcome by using the GOSLON yardstick,[2-6] the modified Huddart/Bodenham system,[1,7] and the EUROCRAN criteria,[8-10] and in evaluating the association of the congenital and post-natal treatment factors on the treatment outcome based on these indices.

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Evidence based practice has revolutionized every field of health care. With increasing epidemiological surveys, the outcome effects of the treatment provided are being evaluated, which has led to the selection of the most appropriate techniques and to the avoidance of protocol and environmental factors that can affect treatment outcome. To improve the treatment outcomes of these surgical cleft repairs one should identify the role of the reparative surgeries, their confounding factors and the association between the two. For auditing the treatment outcome of CLP many indices have been designed based on different scales of measurement. The most commonly used scale of measurement to assess the treatment outcome of CLP is the dentoalveolar relationships. Extensive research efforts have predicted the treatment outcomes of unilateral cleft lip and palate cases based on the specific indices available.[4-10]

We recommend the development of an index which incorporates all growth planes as well as focuses on the cephalometric landmarks. It would enable surgeons to predict the outcome of all types of clefts and plan interventions accordingly. Clinical application would take place once the index goes through validation, reliability and reproducibility testing, and calibration of the personnel.

Global implementation of the index for assessment of cleft patients is the dilemma of our research and development endeavours. Maybe the indices that poorly predict or even neglect the intervention-oriented details have been widely implemented by the politically favoured cleft researches despite the efforts made to prove other indices valid. Or maybe not enough research has been done using the "not so" newly developed indices, that these could be implemented for practical use on daily basis.

We believe that use of multiple indices to incorporate the assessment of multiplanar growth can provide better understanding of growth as well as assess the treatment outcomes of different treatment modalities more accurately. This information can then be used to encourage the use of treatment options which lead to better outcomes.

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