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Commentary to "Comparison of hypospadias phenotype pixel segmentation to GMS score"; towards precision care in hypospadias management: Navigating challenges and embracing innovation

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This article presents a comparison between hypospadias pixel segmentation and GMS score for the classification of hypospadias [1]. Introducing a comprehensive and standardized approach to the assessment and surgical management of Hypospadias malformation is paramount for optimizing patient outcomes. In recent years, considerable attention and efforts have been directed towards developing objective classification systems and severity scoring tools. However, despite these advancements, challenges persist, particularly regarding the subjectivity and reproducibility of existing methodologies.

Among the notable advancements is the Spongiosa Bifurcation-based Hypospadias Classification System [2] and the Plate Objective Scoring Tool [3–5] aimed at providing a more precise delineation of the urethral plate's characteristics, essential for informed surgical decision-making. However, a critical examination reveals lingering concerns regarding the efficacy of certain approaches. One such concern pertains to the purported ability of pixel-based models to gauge "tissue quality," [1] a proposal to be appreciated but is unsubstantiated by the absence of crucial biomarkers such as biomechanical profiles, histological patterns, vascularity etc. can be identified using the given colorimetric parameters and geometric spatial correlations of this "pixel-based picture." This approach is solely effective for segmenting photos without precise representation of the "tissue quality". Furthermore, the reliance on subjective metrics, such as the glans component of the GMS scoring system [6], underscores the pressing need for more objective measures. As we navigate the complexities of hypospadias management, a shift towards standardized, reproducible tools is imperative to ensure optimal patient care.

Looking ahead, the journey towards enhancing the evaluation and treatment of hypospadias malformations must continue with renewed vigor and focus. As we reflect on the strides made thus far, it becomes evident that future progress hinges on several key avenues. First and foremost is the imperative to validate and refine existing objective tools, ensuring their reliability across diverse patient populations and clinical settings. Additionally, advancements in imaging technology, artificial intelligence [7] and biomarker discovery hold immense promise for providing deeper insights into tissue quality and prognostic indicators. By embracing these future directions and remaining steadfast in our commitment to excellence, we can strive towards a future where every individual affected by hypospadias receives the highest standard of care tailored to their unique needs.

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Declaration of competing interest

The author has nothing to declare.

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