Review of: "Embryological Development of Anorectal Malformations: A Hypothesis"

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Potential competing interests: No potential competing interests to declare.

Through a comparative analysis of the existing literature on the classification of anorectal malformations (ARMs) and the surgical outcomes, the author proposes a new hypothesis on ARMs development and introduces a revised classification system with surgical recommendations. Additionally, your hypothesis on ARMs and the proposed revised classification system demonstrate valuable critical thinking and a willingness to challenge established ideas. Your efforts to highlight clinical issues that deserve more attention are greatly appreciated.

However, after careful evaluation, we've identified several areas where the manuscript could be improved to strengthen its scientific rigor and overall impact. Some revisions will be needed before the manuscript can be considered for publication. Below are some suggestions to assist with your revisions and encourage further academic discussion.

1. Title and Scope

It may be more suitable to avoid directly referencing "embryonic development" in the title, as the manuscript only briefly addresses embryological concepts and does not provide experimental evidence on embryological or morphological changes. A title like "The Mechanism of Anorectal Malformations: A Hypothesis" would be better.

2. Core Hypothesis

The manuscript proposes that:

Except for the true cloaca, all types of ARMs are caused by defects in the ectodermal rudiment of the anal canal. This results in the endodermal rudiment failing to meet the ectodermal rudiment along its normal developmental path. Consequently, the endodermal rudiment shifts anteriorly and superiorly, forming an ectopic anus, which is currently considered a fistula or blind end. Within this narrowed fistula or blind end, a functional anal canal may still exist.

While this hypothesis is thought-provoking, it appears to be based primarily on clinical observations rather than supported by robust experimental evidence. Moreover, prior embryological studies indicate that the cloacal structure persists throughout the development of the human hindgut until anal rupture. Additionally, it is not identified in embryological research that the so-called "upper part of the vagina", derived from the mesonephric or paramesonephric ducts, appears before anal rupture. Meanwhile, the role of mesenchymal tissues in the evolution of cloacal structures is gradually being elucidated. So the hypothesis that the endodermal rudiment actively shifts anteriorly remains speculative and warrants further evidence. From an embryological perspective, these points are worth further discussion and elaboration to enhance the hypothesis's credibility.

Conclusion

We value this work's innovative perspective and encourage you to incorporate experimental or additional evidence to substantiate the central hypothesis. This would help address the concerns raised and strengthen the manuscript’s contribution to the field. The points above are presented for further discussion and consideration.