

The Isthmus of the Cervix: Its Anatomical, and Functional Existence Should be Reconsidered: A Hypothesis I

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Abstract

Objective Failures in understanding uterine functions during pregnancy are a major shortcoming of healthcare and can be attributed to many possible causes. Importantly, there might be flaws in the current concept of human parturition, which creates a genuine barrier to a greater understanding of the process. The objective of the study is to challenge the existence of the isthmus in view of the current evidence-based studies. Design: Research Study Setting: Portiuncula University Hospital, Ireland Population: N/A Methods: This study investigated the current evidence-based literature that may support our proposed hypothesis. Main Outcome Measures: N/A Results The isthmus of the cervix, both anatomically and functionally, does not seem to exist. There has been no convincing evidence to support its existence since Aschoff first proposed it in 1905. In fact, the embryological, anatomical, and histological characteristics of the cervix and the radiological evidence for cervical changes during pregnancy challenge its existence. The study makes it clear that there are two opposing and contradicting views about the isthmus. In the first view, the isthmus and its nebulous character must be accepted, and no evidence contradicting this concept in the human being could be found. The other view is that the isthmus, geographically and functionally, does not exist, and we have provided abundant evidence to support this view. Conclusion The anatomical and functional division of the cervix into isthmus and non-isthmus portions may be the main obstacle to understanding cervical function and parturition and they should be revised in light of this hypothesis.

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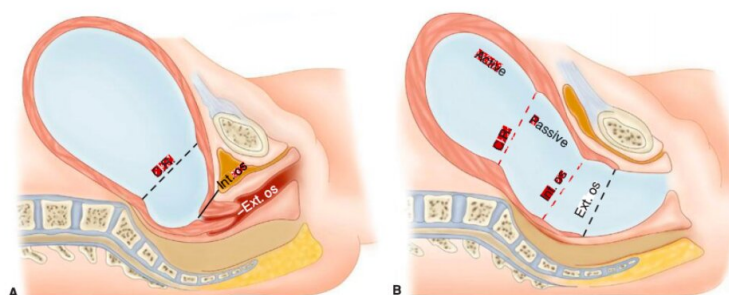


FIGURE 23-1 Diagrams of the birth canal. **A.** At the end of pregnancy. **B.** During the second-stage of labor, showing formation of the birth canal. CR = contraction ring; Int. = internal; Ext = external. (Adapted from Williams, 1903.)