



Textbook of Embryology

For Undergraduate Students

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*Dedicated to our
alma mater,
Government Medical College, Nagpur
and to
all our students*

*Suresh D. Gangane
Shabana M. Borate*



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Suresh D. Gangane



Shabana M. Borate

Preface

As undergraduate students, we considered Embryology to be the most difficult part of Anatomy. By and large, students find it difficult to understand. To us, the only respite in our undergraduate days was the short-notes format for the answers in our Embryology examinations. But now, with our vast experience as teachers of Anatomy, we can assure you that Developmental Anatomy (Embryology) makes the most fascinating and interesting field in the discipline of Anatomy. It is indeed wonderful that from a single cell, the zygote, a whole organism with billions of cells is developed. The precision with which this task is accomplished is highly astonishing. However, development processes are not always perfect and are subject to flaws. At times, some errors do creep in that make the development deviate from the normal pathways, consequently leading to accidental changes, which are reflected in the form of congenital malformations.

To understand the genesis of congenital malformations, an in-depth knowledge of how the normal development occurs is indispensable. It is equally significant to understand the reasons for their digression from the normal route. Also, one needs to understand and identify the factors responsible for such deviations leading to abnormalities so that eliminating such a factor, for example, thalidomide causing amelia or phocomelia, can prevent occurrence of such malformations. Another example is the deficiency of folic acid that leads to neural tube defects. Providing folic acid supplements can mitigate or prevent such defects.

This book makes a very diligent endeavor to present all the information in simple language for easy assimilation of concepts by the students. Schematic representations have been incorporated into the text for better understanding, thereby offering an advantage to students who may reproduce them while attempting the theory paper in their examination. Thus, an attempt has been made to offer students an apt volume of text clubbed with figures, essential to write a short note on any given topic.

We have tried to make this intricate topic of Embryology as easy as possible. We believe undergraduate students of medicine will find it very useful. Suggestions from faculty and the student community are invited to improve on the subsequent editions of this book. With this, we humbly submit it to the readers.

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