

Observation of an endothelial mitosis in a mesenchymal capillary of the scala tympani during the development of the guinea-pig

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Summary. A mitosis in an endothelial cell during the development of the cochlea of the guinea-pig is described; the occurrence of endothelial mitoses is discussed.

In the course of embryological studies on the development of the inner ear of the guinea-pig (PIRBRIGHT-albino-stem)^{1,2} we observed a mitosis in a capillary endothelial cell of the mesenchyma underneath the basilar membrane. The capillary (figure) consists of endothelial cells which are interconnected by desmosomes. At the external surface of the endothelial cells, some pericytes are located. A basal lamina is not present. Red blood cells are contained in the lumen. The dividing endothelial cell is rounded and protrudes into the lumen; the dividing cell is connected with neighbouring endothelial cells by desmosomes.

This incidental observation appears to us noteworthy for 2 reasons: a) because direct observations of a mitosis in an endothelial cell have rarely been made³; b) because in the following 4 days of development there is an involution of the mesenchyma underneath the basilar membrane when the scala tympani widens completely^{1,2}.

Since His's⁴ first embryological studies in the chicken, it is well known that capillaries grow by sprouting. Endothelial mitoses of the sprouting capillaries are mentioned by Benninghoff⁵. In more recent publications, only a few observations of endothelial mitoses can be found^{3,6}. Dempsey³ finds in capillaries of human placental villi mitoses only in pericytes, Luse and Dempsey⁷ find in capillaries of embryonic nervous tissue mitoses in endo-

thelial cells as well as in pericytes. Dempsey³ concludes that capillary sprouting mainly derives from division of pericytes.

We conclude from our finding that endothelial mitoses occur more frequently than appears from reports in the literature. This is also supported by autoradiographic findings⁸⁻¹².

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Mitosis of a capillary endothelial cell in the inner ear of the guinea-pig on day 46 of embryonic development. Uranylacetate. $\times 8250$.