

tumors. Very often the latter presents a distinct fibrous structure to the naked eye, and yet neither by the microscope nor through the finest sections can isolated fibres be separated or demonstrated. This condition is particularly the case when the fibres do not originate from cells, but by splitting or cleavage of plastic coagulated matter, as is frequent in fibrous and fibrinous polypi, in the tumors of the uterus which have been produced from coagula of blood, and in old fibrous exudations. The contour of the fibres in these cases often is indicated only by shaded lines.

3. Striated muscular tissue rarely originates independently of the muscular system, but lately has been observed by Rokitsansky * in a tumor of the testicle. On the contrary, its production is frequent in hypertrophy of the muscles. The mode of development of this variety of muscular fibre is unknown. Unstriated or smooth muscular tissue frequently originates anew upon that of the stomach. The fibres of this variety are formed by the deposit of layers around a nucleus which subsequently disappears.

4. Nerve tissues in the form of cylindrical fibres I have observed in pseudo-membranes and in the rare cases of reproduction of cephalic substance after loss from hemorrhagic softening. The mode of development in both cases is unknown.

5. Mucous tissue. The pus-producing membrane and granulations alone belong to this category. It originates from cells.

6. Blood and blood vessels. In pathological structures the blood-corpuscles form earlier than the blood-vessels, are grouped in isolated points, and in size resemble those of the embryo, as in pseudo-membranes and in enchondroma. The new blood-corpuscles are at first pale, and their nucleus is frequently distinct, but disappears at a later period. The formation of blood vessels is as difficult to trace as in the normal development, but I am acquainted with three modes in which it occurs, viz.:—

1. By prolongation of pre-existing vessels—a process which is more frequent than is generally supposed.

2. By the production of channels, the sides of which, at a later period, become defined by vascular parieties.

3. By development from cells. This I consider to be the rarest mode, having myself observed it but once. †

* Wiener Zeitschrift, 1849. (Virchow has since imparted an instance of the production of isolated muscular tissue in a tumor of ovary, and referring to the observation of Rokitsansky, makes the philosophical remark, that it is not to be overlooked that the occurrence of muscular tissue in both cases in a generation gland—once in the testicle, the second time in the ovary—confirms our knowledge that in these parts also pathological reproductions are most frequent.—*Trans.*)

† Kolliker states he has observed the origin of vessels in the batrachian larva in these cases by processes from the vena caudalis from stellate cells, and by the productions of mesoderm.