

and cats---I saw no single instance of large intradural hemorrhage, on autopsy, except when fracture was present. In one case, it was at first supposed that there was no fracture, but on removing the vertebral column, one was discovered extending through the body of the seventh dorsal vertebra. In nineteen autopsies on those dying from spinal injury accompanied by extra-dural bleeding, a fracture co-existed in all cases. It is doubtful if the cord, or any section of it, can be strangled and its functions suppressed by an effusion of blood, external to the dural envelope. But after the membranes or medulla itself have suffered from violent tension, torsion or contusion, a large hemorrhage then greatly aggravates existing conditions, giving rise to grave complications, by the immediate suppression of function, or by exciting an ascending meningitis or myelitis.

From the comparatively frequent occurrence of cerebral hemorrhage in cranial traumatism, we have been led, too often, to

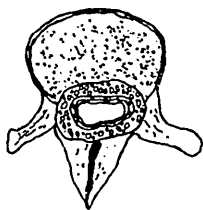


FIG. 2. Circulation in the rachidian canal.



FIG. 3. Comparative capacity of venous and arterial circulation.

assume the existence of "spinal apoplexy" after injury; and that the bleeding has been into the substance of the cord rather than external to it. This was what I looked for in my early hospital experience, in autopsies on those who had succumbed from violent injuries of the spine.

In 1893 I published notes of fifteen autopsies on this class, besides on fifty-five cases of spinal injury which recovered or remained paralyzed. My views on the subject then were as follows:

"I have never met with a single case, on autopsy, which gave conclusive demonstration of a free hemorrhage, which was exclusively limited to the spinal marrow, or subdural space, in which the leakage was of sufficient volume to seriously threaten the integrity of the cord by immediate pressure, or to excite consecutive inflammation. On the contrary, in all my cases of spinal hemorrhage, in which *post-mortem* examinations were permitted, the blood escape was external to the theca; extra-dural.