

1. *Membranes*.—*a. Dura mater*, very adherent and much thickened. Outer surface white, but studded with many bleeding points. Calvarium also studded with similar points, and near posterior end of sagittal suture an area about  $1\frac{1}{4}$  inch long and  $\frac{3}{4}$  inch wide, where the dura mater seemed to have ossified a little and left little osteophytes sticking to the bone. The calvarium was, if anything, slightly thinner than usual. Over both parietal regions was a well-marked false membrane, simulating the arachnoid, but showing at its line of junction with the dura well-marked sacculations, and separated from it by effusion and bloody clot, so that it seemed at first as if the dura were about  $\frac{1}{8}$ th inch thick in places, and full of tawny brown serum and clot. There was a thin clot, about  $\frac{1}{8}$ th inch thick, on each side in frontal region, and these thinned off to mere reddish inflammatory infiltration.

*b. Pia mater*, apparently normal, but for blood-staining, which was not all *post-mortem*.

2. *Cerebrum*.—Convulsions in parietal and frontal regions slightly flattened; whole organ small. No evidence of arterial disease, even vessels entering anterior perforated space seemed normal. White matter slightly congested and pink in color. Very little cerebro-spinal fluid in ventricles, and that sanguineous.

3. *Cerebellum*.—Normal.

4. *Pons and medulla*.—Some areas of pink, but no extravasation. One or two small vessels seemed to ooze too freely on cut surface, as if engorged.

*Post-mortem diagnosis*.—Pachymeningitis hæmorrhagica interna, not acute but chronic; death due to exacerbation, with at least two effusions large enough to form clots.

Looking up the history of this disease, we find Fagge referring to Virchow, who was the first to elucidate its pathology and gave it the name by which it still goes. Fagge prefers the name *hæmatoma of the dura mater*, but that would seem undesirable, as conveying no distinction between this disease and the condition usually traumatic, in which blood is effused between the dura mater and the bone; a condition different in almost every respect, both as to its anatomy, its etiology, its prognosis and its treatment. Osler remarks the rarity of the disorder and says that "Virchow's view that the delicate vascular

membrane precedes the hæmorrhage is undoubtedly correct." He says, too, that extensive bilateral disease may exist without a single symptom; but this, I think, must occur only in cases of paresis, when subjective symptoms are not apt to be complained of. The three causes given by Fagge and all the other authorities I have been able to see are: *a*, senile decay; *b*, chronic alcoholism; *c*, general paralysis of the insane; and Fagge intimates that he holds the disease to be merely a complication of cerebral atrophy in one of the three above-mentioned conditions. It does not seem to have been so in my case, as there was no evidence of insanity, or even incompetence for business. Idiots and epileptics are said sometimes to have advanced forms of the disease.

Opposed to Virchow's theory, but now no longer held, is that of Huguenin, who held that the initial lesion was a soft layer of blood-clot spread out over the convolutions, and slowly organized to a sort of membrane which was separated from the dura mater by subsequent hæmorrhages or effusions. But this cannot very well have been the case, as one would expect the pia mater to be adherent to one side of the clot and the dura to the other, which seems never to occur.

Delafield and Prudden put the present view of its pathology very well, as follows: "This form of chronic inflammation of the dura mater is characterized by the formation of layers of new delicate connective tissue, with numerous very thin-walled blood-vessels, from which the blood is prone to escape. The membrane may at first appear as a delicate fibrinous pellicle, with small red spots scattered through it; or it may look like a simple reddish or brown staining of the inner surface of the dura mater. Microscopical examination shows this membrane to consist of numerous blood vessels, mostly capillaries with very thin walls, which may be distended or pouched, and which have grown out from the vessels of the dura mater. Between the vessels is a homogeneous or slightly differentiated basement-substance, containing a varying number of fusiform, branching or spheroidal cells. Red blood cells in varying quantity, and blood pigment in various forms, frequently enclosed in the new cells, and small calcareous concretions