

parietal, the pus from which gave a pure culture of the bacillus of typhoid. Recovery followed after a free incision with thorough scraping of the soft tissues and a superficial chiselling of the exposed bone.

Passing over, for want of time, typhoid abscesses, typhoid haematoma, the cerebral complications of typhoid, otitis media, and the typhoid affections of the larynx, pleurae, lungs and heart, the stomach and oesophagus, I will speak of intestinal perforation in typhoid.

*Perforation of the Intestines.*—In 4,680 cases tabulated by Fitz, the mortality from perforation was 6.58 per cent., which may be accepted, therefore, as fairly representing its frequency. It is certainly much more frequent in men than in women, for what reason we do not know. In children it is very rare. Fortunately for the surgeon and the patient, there is generally only one perforation, although two have been reported in 21 cases, and in 2 cases there were 25 to 31. In 81 per cent., the perforation was in the ileum, in 12 per cent., in the large intestine, and in a few instances in the vermiform appendix, Meckel's diverticulum, and jejunum. The greatest number of perforations have occurred during the second, third, or fourth weeks of the fever. The mortality has, up to the present, been very high. It is a debatable point whether perforation of the intestine in typhoid fever ever recovers without operation. Murchison placed the mortality at 90 per cent., and the mortality after general peritonitis had occurred at 95 per cent. With our present knowledge of the results of infection of the peritoneum by intestinal contents, and the experience gained by operators in the uncertainty of the diagnosis of perforation by the most careful and experienced clinicians, one may reasonably doubt the existence of perforation in any case when recovery follows.

There are 89 well-authenticated cases of operation for typhoid perforation recorded, with 17 recoveries, a mortality of 81 per cent., which when compared with Murchison's unchallenged figures of 90 or 95 per cent., may well give us hope for still better results in the future. Keen's analysis of Westcott's table of 83 cases shows some surprising results. Under fifteen years of age there were five cases and two recoveries, or 40 per cent. of recoveries. From fifteen to twenty-five years of age there were 23 cases and three recoveries, or 13 per cent. of recoveries. From twenty-six to thirty-five years of age there were 24 cases and 5 recoveries, or 20.8 per cent. of recoveries. Over thirty-five years of age there were 11 cases, with 5 recoveries, or 45.5 per cent. of recoveries.

These figures show that operation for typhoid perforation of the intestines are more fatal between sixteen and thirty-five than under sixteen and over thirty-five.

A critical enquiry into the cause of this tremendous mortality, which