hernia, or from escape during an operation. Under certain circumstances we are to look upon peritonitis as a warning, *e.g.*, in the early stages of an inflamed appendix, which condition may be checked if the warning is taken. Many organisms are capable of causing peritonitis: the three most common being the *staphyloccus albus*, the *bacillus coli*, and the *streptococcus pyogenes*. It has been shown that the staphylococcus albus is usually the first to appear, and it sets up a mild degree of inflammation which is essentially of a protective nature. Serum is exuded in considerable amount, and in the serum are numerous phagocytes, which are ready to meet and deal with any more virulent organisms which may arrive on the scene. At the same time the absorptive function of the peritoneum comes into play, and removes the excess of serum with the phagocytes and their victims. As a further result of this inflammatory process, fibrinous flakes form on the peritoneal surfaces, and gum them together so that they form adhesions which make a protective barrier; and this prevents further egress of organisms, limits the absorption of toxic material, and prevents the spread of infection. Up to this stage peritonitis is protective, and, if the warning is taken and nature is aided by appropriate surgical measures, the inflammation may be checked, and its spread arrested. The bacillus coli is a more virulent organism, and when it appears it sets up more profound irritation, but its power of doing mischief is diminished by the presence of the useful preliminary barrier of adhesions set up by the albus. The streptococcus pyogenes is a still more virulent organism, and when it arrives in great numbers the toxins which it produces are extremely poisonous. Acute inflammation of all layers is set up, and as the organisms are overwhelmingly active, there is no protective reaction on the part of the peritoneum; a large area is rapidly involved, and general peritonitis and septicæmia set in. The action of the toxin may paralyse the muscles of the intestine, and the fluid contents, becoming stagnant, are much more irritating. Gases form, and we have distension of the bowel, and symptoms of obstruction, the organisms inside the paralysed bowel become much more virulent, the walls allow them to pass into the peritoneal cavity, and absorption may be so great that general poisoning and death may result.

The severity of an attack of peritonitis depends upon various factors. Thus (1) much depends on the virulence of the organisms present, *e.g.*, whether the staphylococcus albus, the bacillus coli, or the strepto-pyogenes, It is also influenced very much by (2) the part of the abdomen involved. When the upper (diaphragmatic) part of the peritoneum is involved it reacts much more readily and seriously, as for example, cases of rupture of the stomach, pancreatitis, septic conditions of the liver, gall bladder, etc. Whereas in appendicitis and gynæcological affections the results are much less severe because the lower (pelvic) part of the abdominal cavity reacts less. And (3) much depends on the superficial area involved, *e.g.*, whether a wide area is infected by a flooding from a burst abscess, or a limited area of infection from a mere slight leakage. And (4) individuals may vary very much in their susceptibility. I have repeatedly observed, for example, that red haired people suffer less from peritonitis, and survive even several infections.

Treatment after Operation.

We may now pass on to consider some symptoms which are common to all abdominal operations.

Shock is an evidence of exhaustion of the vaso-motor centres in the brain. These centres govern the circulation, and when they are out of order the circulation fails. There is (1) a fall in the general blood pressure; arterial blood is not carried to all parts of the body, and venous blood stagnates in the large abdominal veins, and the small quantity of blood left in the arteries is insufficient to maintain an efficient supply of blood to the tissues. The heart has not enough blood to send through the body, hence the rapid, feeble, ineffectual pulse, characteristic of shock, after abdominal operations. Speaking generally, the higher up in the abdomen the operation is, the greater is the shock. In shock (2) the specific gravity of the blood is raised, and life cannot be sustained by such blood. Transfusion is useful in lowering the specific gravity. (3) The circulation through the lungs is deficient, with the result that the blood is not properly aerated. Finally, the heart becomes exhausted, and, if not aided, death results.

Treatment of Shock.—The main object is to give the heart enough fluid to contract on. This may be aided by raising the foot of the bed so that the pelvis is on a higher level than the thorax and head. It is sometimes advisable to drive the blood from the limbs, where, for the time being, it is not required, into the trunk, by bandaging the limbs from below upwards. A tight abdominal bandage should be applied over the dressing, so as to prevent abdominal congestion and drive the venous blood on into the circulation. Drugs are of

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