down incision is employed and the lateral edges of the wound are brought together, the union will not remain permanent, even if the sac contents can be replaced in the abdominal cavity, because mechanically this plan of closure is defective. Intra-abdominal pressure, as you all know, is exerted especially against the longitudinal axis of the belly, and this always tends to separate the recti muscles, and no matter how carefully they are brought together and approximated—which is often impossible in large hernia—they will gradually separate again because the same forces continue which originally caused the production of the hernia.

Murphy noticed that the patients upon whom the Mayo operation had been performed did not suffer from the vomiting and straining after the anæsthetic, as did the patients on whom the up and down operation had been employed. In the Mayo class the straining, instead of separating the recti muscles, tended to bring them closer together and solidify more thoroughly the point of contact. Moreover, he found that pulmonary odœma which came on so frequently a few hours after the old operation, and from which so many cases died, did not in the Mayo operation, and this he attributed to pressure on the diaphragm due to the sudden, forcible return into the belly cavity of so much hernial contents.

Umbilical herniæ usually first make their appearance in the upper one-third of the navel ring, or close to it, because it is here where the more yielding umbilical vein is situated, while the lower two-thirds is occupied by the umbilical arteries and urachus, whose tissues are denser and less elastic. Moreover, below the navel the recti are in perfect contact; in fact, so close is the union that the linæ alba exists merely as a thin line, while above the umbilicus the recti separate from a half to three-quarters of an inch, making a weak spot in the abdominal parietes —as these muscles go up to be inserted into the front of the ensiform and the seventh, sixth and fifth costal cartilages.

Umbilical herniæ on account of their prominent and very superficial position are easily irritated and injured, and as a result they are usually irreducible. Dense adhesions are present, and numerous bands are found, making possible all kinds of sacculations and diverticula, so that obstruction and strangulation is a very frequent complication in these ruptures, and an adherent omentum is almost invariably present. Consequently, these herniæ should be operated upon early when they are small and reducible and when the technical difficulties are easily overcome. When the hernia has reached a huge size, as is often the case, the omentum is everywhere adherent to the neck and sac, and the bowels are sometimes bound together so that the operation is extremely difficult, and the greatest care must be exercised in separating the parts.