recent meta-analysis of mutations in the *RET* protooncogene confirmed a significant association between *RET* polymorphisms and Hirschsprung disease (Liang, Ji, Yuan, et al, 2014).

Pathophysiology

The pathology of Hirschsprung disease relates to the absence of ganglion cells in the affected areas of the intestine, resulting in a loss of the rectosphincteric reflex and an abnormal microenvironment of the cells of the affected intestine. The term *congenital aganglionic megacolon* describes the primary defect, which is the absence of ganglion cells in the myenteric plexus of Auerbach and the submucosal plexus of Meissner (Fig. 22-2). In 80% of cases, the aganglionosis is restricted to the internal sphincter, rectum, and a few centimeters of the sigmoid colon and is termed *short-segment disease* (Liang, Ji, Yuan, et al, 2014).

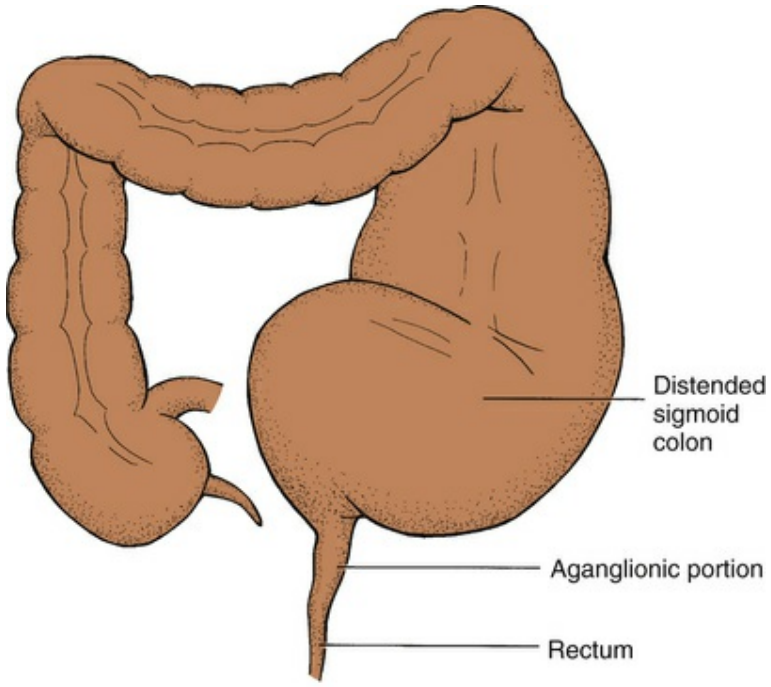

FIG 22-2 Hirschsprung disease.

The absence of ganglion cells in the affected bowel results in a lack of enteric nervous system stimulation, which decreases the internal sphincter's ability to relax. Unopposed sympathetic stimulation of the intestine results in increased intestinal tone. In addition to the contraction of the abnormal bowel and the resulting