

Sigmoid Colon, Rectum: Extent, Mesentery, and Innervation; Clinical Correlations; Anatomy of the Anal Canal

Lecture Notes By: John Lorenz Beleno, RM, RN, MD

Large Intestines:

- Starts at the Ileo-Cecal junction
- Ascending colon
- Hepatic flexure
- Transverse colon
- Splenic flexure
- Descending Colon
- Sigmoid colon
- Rectum

Sigmoid Colon:

- Lies between the Descending colon and the Rectum
- Begins at the pelvic brim and ends at the Rectosigmoid junction
- **S3**: where peritoneal investment and mesentery of the Sigmoid ceases
- Length: 25-40 cm (10-15 inches)
 - *Varies depending on the length of the Mesosigmoid*

Anatomic landmark:

- **External Iliac artery**: divides the Sigmoid colon into Iliac and Pelvic divisions

Divisions:

- **Iliac Segment**:
 - Lies in the Iliac fossa
 - Extends to the pelvic brim
- **Pelvic Segment**:
 - Omega-shaped coil (Ω)
 - Suspended from the posterior pelvic wall by the **Pelvic Mesocolon**
 - Located at the pelvic cavity
 - **Lateral limb**:
 - Part of the pelvic colon that is mobile
 - Mobility depends on the size of the mesocolon
 - **Medial limb**:
 - Attached to the root of the mesocolon
 - **Intersigmoid Recess**:
 - Small funnel-shaped pouch
 - Deep or superficial
 - Usually located towards the root of the mesocolon
 - Acts as a guide to the **Left Ureter**

Mesosigmoid membrane:

- Lane's first and last kink
- Thickening and shortening of the peritoneum of the left Iliac fossa
- Binds the junction of the Iliac and Pelvic colon to the pelvic brim
- Avascular

Clinical:

Internal or Intra-Peritoneal Hernia:

- *Part of the bowel, specially the distal part of the small intestines, insinuates through the intersigmoid recess and gets trapped in the recess*

Volvulus:

- Obstruction caused by twisting of the stomach or intestines upon itself
- Contents get accumulated in the area creating a "Closed-loop" obstruction
- Affects the blood supply to the affected intestines
- Will eventually burst leading to Peritonitis
- Peritonitis can lead to Sepsis then death

Rectosigmoid Junction:

- Termination of the Sigmoid colon

Features:

- Narrowing of the diameter of the colon
- Lack of peritoneal investment
- Disappearance of a true mesentery below the rectosigmoid
- Spreading out of 3 longitudinal Taenia coli
- Appendices Epiploicae up to its end
 - *Fatty tissues hanging at the wall of the large intestines*
- Gross morphologic change internally

Rectum:

- Length: 13 cm
- Begins in front of S3
- Course:
 - Passes downwards following the curve of the Sacrum and the Coccyx
 - Ends one inch in front of the tip of the Coccyx
- **Rectal Ampulla**:
 - Dilated portion of the Rectum where the fecal material is usually stored
- **Peritoneal Covering**:
 - Upper third: anterior and lateral peritoneum
 - Middle third: anterior surface
 - Lower third: devoid of peritoneal covering

