

# Anatomy of the Transverse Mesocolon Based on Embryology for Laparoscopic Complete Mesocolic Excision of Right-Sided Colon Cancer

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## ABSTRACT

**Background.** To treat colon cancer via complete mesocolic excision (CME) with central vascular ligation (CVL), dissection along the embryologic fusion planes is required. However, this surgery is difficult, especially for right-sided colon cancer, because the anatomy and embryology of the transverse mesocolon are not familiar to gastrointestinal surgeons.

**Methods.** In this video article, the anatomic details of the transverse mesocolon based on embryology are illustrated with a focus on the venous anatomy. Dissection of the transverse mesocolon along the embryologic planes using a cranial approach during laparoscopic right hemicolectomy also is presented.

**Results.** During the development of the primitive gastrointestinal tract, the transverse mesocolon locates between the terminal portion of the midgut and the

beginning of the hindgut. After 270° counterclockwise rotation of the primary intestinal loop, the transverse mesocolon fuses with the frontal surface of the duodenum and pancreas. Simultaneously, the greater omentum hangs down from the greater curvature of the stomach in front of the transverse colon and fuses with the transverse mesocolon. Moreover, the drainage vein of the right colon sometimes joins the right gastroepiploic vein, and the gastrocolic trunk is formed. Anatomic complexity of the transverse mesocolon is caused by rotation and fusion of the gastrointestinal tract during embryologic development. **Conclusions.** Knowledge concerning these embryologic peculiarities of the transverse mesocolon should be useful in the performance of laparoscopic CME with CVL for right-sided colon cancer.

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