

Euro Surgery 2020 Complete Mesocolic Excision and Central Vascular Ligation in Colon Cancer Surgery, Feasibility and Outcome

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Background: Colon cancer continues to be a major health problem worldwide. Being the third most common type of cancer in men and the second in women. Standard treatment of colon cancer is based on surgical resection. An adequate number of lymph nodes harvested are important for a correct stabilization of the disease; thereby the extension of the colonic resection remains controversial. Complete mesocolic excision (CME) with central vascular ligation (CVL) has recently been found to improve oncological outcomes in patient with colonic cancer. Complete mesocolic excision is based on a correct identification of the dissection plane between the mesofascial plane and the retroperitoneal fascia, central vascular ligation of the vessels to remove vertical lymph nodes and resection of the affected colonic segment. **Methods:** This is a prospective study done at general surgery department of Fayoum University hospitals from January 2015 to January 2019 including 60 patients with operable colonic cancer operated with adequate surgical margin, complete mesocolic excision and high vascular ligation. **Results:** The number of dissected lymph node was 27.7 ± 4.2 and this number is more than that dissected in the conventional colectomy mentioned in many studies in literature, moreover larger mesocolon area, longer distance from vascular high ligation point to intestinal wall, and longer distance from vascular high ligation point to tumor center were observed. **Conclusion:** Strictly only curative treatment and applying the principles of complete mesocolic excision and central vascular ligation in colon cancer surgery can improve cancer outcomes without increase the incidence of postoperative complications.

The colonic mesentery or mesocolon contains the vascular and the lymphatic drainage systems of the colon, so adequate clearance is necessary for colon cancer to have the same oncologic benefit as a total mesorectal excision for the treatment of patients with rectal cancer. In 2009, Hohenberger et al. [1] introduced a new concept trying to translate survival advantages to patients with colon cancer. This new concept of a complete mesocolic excision (CME) with a central vascular ligation (CVL) in the management of patients with colon cancer represents a kind of evolution in operative technique. The concept of a CME as a surgical technique with sharp dissection of the visceral plane from the retroperitoneal (parietal = somatic) one aims to avoid any breaching of the visceral fascia layer, which potentially may lead to tumor spread within the peritoneal cavity. With this procedure, the origin of the colonic arteries can be well exposed and tied centrally at their origins to ensure maximal harvesting of regional lymph nodes. CME and CVL surgery remove more tissue compared with standard surgery in terms of the distance between the tumor and the highly vascular region, the length of large bowel and ileum removed, and the area of the mesentery. In addition, CME and CVL surgery are associated with more mesocolic plane resections and greater lymph node yields [2, 3].

In terms of oncologic outcomes, Hohenberger et al. [1] reported excellent cancer-specific survival rates after CME surgery (stage I, 99.1%; stage II, 91.4%; and stage III, 70.2%) [1]. Moreover, CME surgery is associated with better disease-free survival than is a conventional colon cancer resection for patients with a stage I–III colon adenocarcinoma: the 4-year disease-free survivals were 85.8% after CME and 75.9%

af er non-CME surgery (P = 0.0010). The 4-year disease-free survival for pat ents with Union for International Cancer Control (UICC) stage I disease in the CME group was 100% compared with 89.8% in the non-CME group (P = 0.046). For pat ents with UICC stage II disease, the 4-year disease-free survival was 91.9% in the CME group compared with 77.9% in the non-CME group (P = 0.0033), and for pat ents with UICC stage III disease, it was 73.5% in the CME group compared with 67.5% in the non-CME group (P = 0.13). Af er pr D A

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