Robot-assisted gastrectomy for early gastric cancer: is it beneficial in viscerally obese patients compared to laparoscopic gastrectomy?

The adoption of robotic systems for gastric cancer surgery has been proven feasible and safe; however, a benefit over the laparoscopic approach has not yet been well-documented. We aimed to investigate the surgical outcomes of robotic versus laparoscopic gastrectomy for gastric cancer, according to the extent of surgery and patients' obesity status. Between January 2009 and July 2011, 770 patients were enrolled in this retrospective analysis. All had stage IA/IB gastric cancer preoperatively and underwent either laparoscopic (n = 622) or robotic (n = 148) gastrectomy. Patients were classified into obese and non-obese groups on the basis of visceral fat area (VFA). The extent of surgery was defined by whether patients underwent distal or total gastrectomy. The surgical outcomes following distal gastrectomy were similar between the robotic and laparoscopic groups regardless of the obesity status. After total gastrectomy, the number of total and N2-area lymph nodes were significantly higher in the robotic group than in the laparoscopic group in non-obese patients with VFA < 100 cm² (total, 38.8 vs. 46.5; p = 0.018; N2 area, 9.0 vs. 12.4; p = 0.041), but no significant differences were observed in obese population. Robotic group developed less severe complications after total gastrectomy compared to laparoscopic group in
non-obese patients (p = 0.036). Robotic assistance did not improve surgical outcomes over the laparoscopic approach in obese patients undergoing distal gastrectomy. However, non-obese patients with low VFA may benefit from robotic assistance during total gastrectomy in terms of radical D2 lymphadenectomy with fewer serious complications.