Extra Fat Surrounding Internal Organs Can Lead To Liver Surgery Complications

The amount of intra-abdominal fat appears to be associated with the risk of complications following major liver surgery, according to a report in the November issue of *Archives of Surgery*, one of the JAMA/Archives journals. However, appearing overweight or having a high body mass index (BMI) were not associated with increased post-surgical risks.

About 65 percent of the U.S. population is currently overweight, with half of those qualifying as obese, according to background information in the article. The increased incidence of obesity "requires surgeons to examine more critically the effect of overweight and obesity on their patients," the authors write. "The literature currently presents mixed findings on the effect of overweight and obesity on various surgical populations, with different measures of obesity being used in these studies."

Katherine Morris, M.D., and colleagues at Memorial Sloan-Kettering Cancer Center in New York, studied 349 patients undergoing surgical removal of part of the liver. Computed tomographic (CT) scans taken before surgery were used to assess the amount of perinephric fat, a measure of fat around the kidneys, which was used as a surrogate for intra-abdominal fat. In addition, the patients' BMI was calculated using height and weight data. The authors also used CT scans to measure outer abdominal fat. Complications were tracked through the cancer center's database.

Following the major liver operations, 230 patients (65.9 percent) had complications and nine patients (2.6 percent) died. The average length of hospital stay was 10.8 days.

As assessed by the amount of fat surrounding the kidney, patients with more intra-abdominal fat were more likely to have complications, including severe complications, had longer lengths of hospital stay and were more likely to die within 30 days than patients with less fat. Patients with a higher body mass index (BMI) had procedures that took longer; however, BMI and measures of outer abdominal fat were not associated with the rate of complications, occurrence of severe complications, length of stay or risk of death within 30 days.

BMI seems be a poor measure of the type of obesity that places abdominal surgery patients at risk, the authors note. "As defined by a simple, single surrogate measurement of perinephric fat, intra-abdominal fat was able to be used to risk stratify the patients for mortality, complication rate, severity of complications and increasing length of stay," they write.

"This should help surgeons be better able to identify high-risk patients and, conversely, not refuse an operation based on the presumed high risk of someone with external obesity. Now that most of our patients being considered for a major upper abdominal resection will have a preoperative computed tomography scan, the information provided by looking at levels of perinephric fat is easily determined and should not be ignored."

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