Perirenal Fat Surface Area as a Risk Factor for 30-day Postoperative Complications in Elective Colon Cancer Surgery

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Perirenal fat surface area, an easily measured indirect marker of visceral obesity, was more strongly associated with postoperative complications than BMI, especially in women.

In an observational cohort study at Södersjukhuset, Stockholm, we investigated 30-day morbidity on the Clavien-Dindo scale in 610 patients undergoing curative, elective colon resection 2006-2016.

Introduction
Visceral obesity is associated with postoperative complications in colorectal surgery, however, CT-based methods that measure total visceral fat require advanced image processing. Perirenal fat surface area has been proposed as a valid and simpler substitute.

Main results
In 605 patients, the adjusted OR for any complication in patients with perirenal fat surface area ≥ 40 vs < 40 cm² was 1.68; 95% CI 1.1–2.6, but higher for moderate complications (Clavien-Dindo II: 2.14; 1.2–2.4 and III 2.35; 1.0–5.5).

Objective
To investigate the association between perirenal fat surface area and postoperative complications.

Men had more perirenal fat than women (median 40 vs 19 cm²) and more complications, but the effect of an increased perirenal fat surface area was more pronounced in women. Higher age and ASA-score were associated with severe complications of Clavien-Dindo IV-V.

Limitations
For five patients the method could not give reasonable measurements. The method of managing obstructing organs in the axial CT image needs to be further examined.