

BONE

Fracture risk after bariatric surgery

Patients with severe obesity who undergo bariatric surgery are at increased risk of fractures, according to a new study published in the *British Medical Journal*. The findings seem to contradict the widely-held notion of obesity being protective against fractures.

Using data from the Quebec Integrated Chronic Diseases Surveillance System (QICDSS), 12,676 patients with severe obesity who underwent bariatric surgery (72.3% women, mean age 42.6 years) together with control patients who did not undergo surgery and were matched for age and sex (38,028 patients with obesity and 126,760 non-obese individuals) were followed-up for a mean of 4.4 years in this retrospective, nested case-control study.

Before surgery, overall fracture risk was higher in the bariatric and obese groups than in the non-obese group (RR 1.30 and 1.18, respectively). The increased fracture risk was maintained 4.4 years after surgery: fracture risk in the bariatric group was higher than in the obese and non-obese groups (RR 1.38 and 1.44, respectively). Before surgery, the risk of distal lower limb fractures was higher in the bariatric and obese groups than in the non-obese group (RR 1.71 and 1.43, respectively) and that of upper limb fractures was lower (RR 0.89 and 0.93 respectively). Conversely, after surgery, the risk of lower limb fractures decreased (RR 0.66) and that of upper limb fractures increased (RR for spine 1.70; pelvis, hip or femur 2.58) in the bariatric group compared with the non-obese group. The change in

fracture patterns were consistent with a shift from one associated with obesity before surgery to one typical of osteoporosis after surgery.

The increased fracture risk before surgery was statistically significant for adjustable gastric banding, sleeve gastrectomy and biliopancreatic diversion but not for Roux-en-Y gastric bypass. Conversely, after surgery, only biliopancreatic diversion was associated with a significantly increased fracture risk. Overall, the findings highlight the need for fracture risk assessment and management to be part of standard bariatric care.

David Holmes

ORIGINAL ARTICLE Rousseau, C. et al. Change in fracture risk and fracture pattern after bariatric surgery: nested case-control study. *BMJ* 354, i3794 (2016)