

## Sarcopenic Obesity in Gastrointestinal Surgery

**O Abdel-lah Fernández\* and F Parreño Manchado**

*Gastroesophageal Surgery and Obesity Unit, Surgical Department, Complejo Asistencial Universitario de Salamanca, CAUSA, Spain*

**\*Corresponding Author:** O Abdel-lah Fernández, Gastroesophageal Surgery and Obesity Unit, Surgical Department, Complejo Asistencial Universitario de Salamanca, CAUSA, Spain.

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I found this topic very interesting for a short editorial, especially after reading the latest consensus of the European Society for Clinical Nutrition and Metabolism (ESPEN) and the European Association for the Study of Obesity (EASO), which defines and establishes the diagnostic criteria for sarcopenic obesity. There was an important need to unify the criteria and definition given the marked heterogeneity in the literature [1].

Sarcopenia is a relatively recent concept coined by Irwin Rosenberg in 1989 [2]; it is defined as the loss of muscle mass and muscle function. It occurs physiologically with age and in obese patients. In recent years, clinical and scientific interest in this topic has grown for several reasons, because it is a situation that is related to an increase in morbidity and mortality of patients and because it affects a wide variety of different patients and consequently multiple medical specialties.

Patients with disease-related secondary sarcopenia, especially chronic, inflammatory, and neoplastic diseases, showed adverse outcomes such as physical disability, poor quality of life and increased mortality [3].

In oncology patients, a higher incidence of sarcopenia is expected due to an excessive systemic inflammatory response that can induce insulin resistance and protein hypercatabolism. They also have decreased intake, poorer digestion and symptoms related to tumour disease [3,4].

According to Cruz., *et al.* [1-5] and other authors, the determining factor of sarcopenia is the loss of muscle function mainly due to fatty infiltration of the muscle and this is observed more intensely in obese patients; the coexistence of obesity BMI > 30 and sarcopenia is what is currently defined as sarcopenic obesity, when they occur simultaneously the negative effects on the organism are enhanced compared to if both entities occur separately. It has been consistently shown to be an independent risk factor for frailty, comorbidity, mortality in several high-prevalence diseases, as well as in the general population and in the elderly.

The term sarcopenic obesity was introduced to the scientific community by Baumgartner [6]. Sarcopenic obesity is a new entity within the classification of obesity that is currently quite unknown to most medical professionals who do not have a special dedication in this field.

In relation to surgical patients, more specifically in gastrointestinal surgery, sarcopenic obesity is a concept that has recently been the focus of attention due to its negative impact on postoperative evolution. The application of preoperative multimodal recovery protocols has increased the rate of identification of sarcopenic obesity and, on the other hand, the nutritional treatment associated with exercise applied in the perioperative period has been shown to mitigate its effects on postoperative evolution.

Sarcopenic obesity in surgical oncology patients is associated not only with an increase in surgical and infectious complications, but also with a higher rate of toxicity and lower tolerance to adjuvant therapies due to over dosage, all of which leads to a decrease in the survival of these patients [3-6].

The lack of universal diagnostic criteria for sarcopenic obesity significantly affects the identification of these patients and, therefore, we do not know the real incidence of this clinical situation, nor the exact impact on the results and costs that this may entail.

The diagnostic procedure for sarcopenic obesity is established in two phases: a first screening phase, where these patients are identified by means of validated SARC-F surveys or clinical suspicion, depending on age (> 65 years), concomitant diseases (heart failure, chronic renal failure or cancer) very often associated with sarcopenia and BMI > 30. A second step, where the diagnosis and its severity is established according to the first loss of muscle function (Hand grip strength and chair stand test) and the alteration of body composition (loss of muscle) identified whenever possible by DXA/BIA, but the difficulty of its application in real clinical practice, due to the limited access to these techniques, makes us use other methods such as CT mainly in oncology patients as most of them have this test in the study of the extension of the underlying pathology; The measurement of the Psoas at L3 correlates very well with the amount of muscle in the whole organism and also allows us to know the fatty infiltration of the same. In the latter case, it could be assessed based on anthropometric calf-circumference measurements adjusted to BMI because it would have a greater predictive value.

Once the diagnosis has been established, it is recommended that severity be established based, according to EWGSOP [6], on the alterations in the functional capacity of the patient as a consequence of sarcopenia, altered gait test, SPPB or functional disability. While the ESPEN and EASO consensus propose establishing severity according to the existence of complications directly attributed to sarcopenia.

In the surgical patient, the presence of sarcopenic obesity is associated with decreased survival, higher incidence of infectious and non-infectious postoperative complications, longer ICU stay, hospital stay and readmission than in non-sarcopenic obese patients. All this results in high hospital costs.

Prado., *et al.* [6] found that sarcopenic obesity was a significant independent prognostic factor in patients with gastrointestinal and respiratory tract cancers. Peng., *et al.* confirmed that patients undergoing liver resection for colorectal cancer were five times more likely to have major postoperative complications.

In bariatric surgery, the identification of sarcopenic obesity is important, these patients have a baseline situation of fatty infiltration at all levels associated with inflammation, there are studies that correlate sarcopenic obesity with increased leakage after sleeve gastrectomy [8]. But more studies are needed to know if sarcopenic obesity in obesity surgery has an impact on their follow up evolution.

It is important to know that the real incidence of sarcopenic obesity is currently unknown due to multiple factors, the main ones being: the lack, at least until now, of a clear definition of this clinical situation with globally homogeneous diagnostic criteria, the need to increase the sensitivity of health professionals when identifying patients with sarcopenic obesity, the awareness of health systems about the importance of this problem and the need to increase the means to diagnose and treat it.

With the idea of taking small steps towards this goal, I encourage you to include an early assessment of nutritional status, including an evaluation of body composition and muscle function, to initiate early treatment that can reverse the evolution of patients requiring surgical treatment, mainly oncology. A multidisciplinary approach is needed to ensure appropriate follow-up throughout the process and should include mainly oncologists, surgeons and nutritionists.

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