

## LETTER TO THE EDITOR

## THE 3D LAPAROSCOPIC APPROACH FOR RADICAL PROSTATECTOMY OVERCOMES THE HURDLES OF METABOLIC SYNDROME

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### To the Editor,

The presence of metabolic syndrome and obesity is linked to a higher risk of a hormone-dependent cancer in these patients during their lifetime [1]. Many hypotheses have tried to explain this association, such as: the higher level of steroid hormones, hyperinsulinemia, high insulin-resistance and the presence of an inflammatory status [2], but the intrinsic mechanisms seem to be more complex.

Referring to prostate cancer (PCa), the results of the Prostate Cancer Prevention Trial have shown that the metabolic syndrome and the high body-mass index associate with a 78% higher risk for an aggressive phenotype [3] and higher cancer specific mortality in comparison with the normal weight control group [4].

Furthermore, the body mass index was associated with a higher risk for the upgrading and upstaging of prostate cancer in presumably low-risk patients, included in an active surveillance program [5]. Discacciati et al showed that for every increase in body-mass index of 5 kg/m<sup>2</sup>, the relative risk was 0.94 for the presence of a locally-advanced disease [6].

The treatment of prostate cancer in metabolic syndrome patients is also debatable. Bindhi et al. showed that performing a radical prostatectomy (open, laparoscopic or robotic) in obese patients has a 49% higher risk for positive surgical margins [7] and Shiota et al. demonstrated on a group of 283 patients that the metabolic syndrome is correlated with a higher risk for biochemical recurrence [8].

The main challenge after radical prostatectomy is the preservation of the functional outcomes. Nishikawa

et al concluded that obese patients regain continence later than the normal weight population, due to the presence of periurethral fibrosis and chronic inflammatory status [9,10].

We analyzed a group of 50 patients with localized and locally-advanced PCa, who underwent 3D laparoscopic radical prostatectomy by properitoneal approach in our department between January-December 2016. The metabolic syndrome was defined as the presence of at least 3 characteristics of the following: blood glucose  $\geq$  100 mg/dl/ antidiabetic treatment, arterial hypertension/ antihypertensive treatment, serum triglycerides  $\geq$  150 mg/dl/ hypolipemiant treatment, HDL  $<$  40 mg/dl and abdominal circumference  $\geq$  102 cm [11].

Almost half (46%) of the patients included in study presented the components of the metabolic syndrome. The age and median PSA at diagnosis were similar between the two groups ( $p=0.65$  and  $p=0.37$ , respectively). Also, we did not identify significant differences regarding the pathological staging and grading of PCa for patients with or without metabolic syndrome ( $p=0.43$  and  $p=0.6$ , respectively).

In our study group, the presence of positive surgical margins and early biochemical recurrence (3 and 6 months after surgery) were not associated with the presence of metabolic syndrome ( $p=0.47$ ). Obese patients regained continence later than the control group ( $p=0.31$  at 3 months and 0.27 at 6 months), but showed a more rapid erectile function recovery, albeit not statistically significant ( $p=0.62$  at 3 months and 0.87 at 6 months) (Table I).

**Table I.** Oncological and functional outcomes of 3D laparoscopic radical prostatectomy in patients with and without metabolic syndrome.

	With metabolic syndrome	Without metabolic syndrome
Overall positive surgical margins	16%	18.9%
Continence at 3 months	72.7%	84.6%
Continence at 6 months	85%	95%
Erectile function at 3 months	52.9%	44.4%
Erectile function at 6 months	53.3%	56.2%

In **conclusion**, we consider that the properitoneal approach employed for 3D laparoscopic radical prostatectomy can overcome the impediments of the metabolic syndrome and can ensure similar oncologic and functional outcomes for PCa patients with or without metabolic syndrome.

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