Letter

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Letter to the editor: Safety and feasibility of platelet rich fibrin matrix injections for treatment of common urologic conditions

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To the editor:

We read with great interest the article by Matz et al. [1] titled "Safety and feasibility of platelet rich fibrin matrix injections for treatment of common urologic conditions". According to this study, platelet-rich fibrin matrix appears to be a safe treatment modality in patients with urologic diseases, such as erectile dysfunction (ED). In the discussion section, the Authors indicate that according to Wu et al. [2], platelet-rich plasma (PRP) injections at the site of cavernous nerve crush injuries helped facilitate nerve regeneration and erectile function in a rat model.

ED pathophysiology is indeed multifactorial, and a significant proportion results from endothelial dysfunction secondary to inflammation. Another significant cause, however, is cavernous nerve injury following radical prostatectomy.

Since the primary indication for radical prostatectomy in humans is cancer, can we consider a platelet-rich concentrate full of growth factors as a safe option that can be applied on a tumor excision site?

Platelet-rich concentrates have been recognized as an effective strategy for tissue regeneration, however, the safety of PRP in terms of tumorigenicity and recurrence has not yet been addressed. Several studies on cancer growth, progression, recurrence and postoperative survival rate, focus on the tumor stroma, which represents a crucial parameter in tumor development [3]. Much research is now devoted to determining the impact of platelet-derived growth factors on tumor development and progression, and the reciprocal influences of tumor products on the stromal microenvironment. A more detailed understanding of the complex parameters that govern the interactions between the tumor and surrounding compartments has already helped to improve anti-cancer strategies, not only for treatment, but also for preventing recurrence [4].

The secretory proteins contained in the α-granules of platelets include platelet-derived growth factor (PDGF-AA, BB, and AB isomers), transforming growth factor-β, vascular endothelial growth factor, epidermal growth factor, platelet-derived endothelial growth factor, and many others [5]. The release of these growth factors stimulates angiogenesis, induces tumor lymphangiogenesis, enhances nodal metastasis rate, regulates several cell biology processes, including tumorigenesis, proliferation and survival, and many others such as cell differentiation, migration, and apoptosis [6].

At this point, and in order to muddy the waters, we would like to reverse our question: Is this enough in order

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to consider PRP as a harmful concentrate that could not be applied for the treatment of post-radical prostatectomy ED? We strongly believe, that the role of PRP in nerve regeneration after tumor excision, deserves further experimental investigation and large-scale prospective randomized clinical trials. The use of novel reversibly switchable *in vivo* tumor models can elucidate the cause-and-effect chain of processes triggered by acute oncogene activation, providing an indication of the extent to which the tumor cell instructs its microenvironment versus the microenvironment instructing the tumor.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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