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CORRESPONDENCE

Comment on: "pterygium: new insights"

Thiago Gonçalves dos Santos Martins[1,2]

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To the Editor:

In response to the article titled "Pterygium: new insights" published in your esteemed journal, I would like to raise a few points regarding this study. This is a well thought of and written paper which demonstrated that Pterygia are common fibrovascular growths with unclear pathogenesis that may involve MDM2 and p53 interaction, and the current adjunctive therapies to pterygium excision with conjunctival autograft include antimetabolites and anti-vascular endothelial growth factor (VEGF) [1, 2].

The pterygium is related to uncontrolled cell proliferation of inflammatory cells. The pathophysiology of the pterygium is related to the mutation in the p53 gene on chromosome 17, in addition to changes in the basic fibroblast growth factor, transforming growth factor β, VEGF, and platelet-derived growth factor. These growth factors were located in epithelial cells, vessel endothelial cells, basal membrane of vessels, fibroblasts, and inflammatory cells of the pterygium [3].

Other biomarkers have also been related to the pathophysiology of pterygium. Some studies have linked viral infections such as herpes simplex virus and human papillomavirus as capable of inactivating p53 and having a relationship with the development of pterygium. The expression of cell adhesion molecules, such as cell adhesion molecule-1, which is present in the pterygium and absent in normal conjunctiva cells, may be another biomarker in the pathophysiology of pterygium. Abnormal expression of cell proliferating proteins such as ki-67 is also present in the pterygium in an amount greater than cells of the normal conjunctiva. Shock proteins that are produced by cells in response to a stressful situation are also present in greater amounts in pterygium cells. The aberrant expression of extracellular matrix proteins (ECM) is also associated with the growth of pterygium. Also, pterygiums may have a higher expression of interleukin 1,6 and 8 than normal conjunctiva cells [4].

The recurrence rate after pterygium surgery varies according to the surgical technique, the surgeon's experience, and the use of adjuvant therapy. Surgical trauma can cause fibrovascular proliferation and lead to recurrence. The simple excision of the pterygium has a high recurrence rate: 30–70% [5].

The use of mitomycin C (MMC) inhibits the growth of episcleral fibroblasts. MMC interferes with endothelial cell proliferation, interfering with angiogenesis [6]. Donnenfeld reported the efficacy and safety of the 0.1 ml (0.15 mg/ml) preoperative MMC injection 1 month before pterygium surgery. Recurrence was 6% after 24.4 months, with a lower rate of vascularization and inflammation, due to an inhibition of fibroblast replication [7].

Conjunctival transplantation was first described by Kenyon et al. in 1985, with a recurrence rate of 5.3% [8]. Studies with preoperative MMC injection in primary pterygium show a recurrence rate of ~6.25% when applied 1 month before surgery and 5% when applied 2 weeks before surgery. The use of 0.02% MMC is an effective therapeutic option to reduce recurrence and did not have serious side effects in its use Thus, data from studies show that the use of MMC, together with the conjunctival autograft technique, further reduces pterygium recurrence [9].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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✉ Thiago Gonçalves dos Santos Martins
thiagogsmartins@yahoo.com.br

[1] Federal University of São Paulo, São Paulo, Brazil

[2] University of Coimbra, Coimbra, Portugal

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