Editorial

Anti-adhesion decreases negative tissue changes in a murine model of vasectomy

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Chung and colleagues demonstrated that the use of an anti-adhesive agent at the time of vasectomy in a murine experimental model can significantly decrease the extent of post-operative adhesions, fibrosis, and inflammation with improved preservation of muscle structure (1). The authors extrapolate that this improvement in tissue properties may decrease the risk of post-vasectomy pain syndrome (PVPS). Although the authors list histologic findings of PVPS to include thickened basement membrane, degeneration of the spermatic cord, perineural fibrosis, and adhesions (2); it would have also been interesting to have assessed if Wallerian degeneration of the trifecta nerve complex was also demonstrated in higher degrees in tissue of the animals not treated with the anti-adhesive agent. The authors note this as a limitation. Wallerian degeneration has been demonstrated to be prevalent histopathologically in men with clinical PVPS (3). Another distinction that should be considered is that there is a subgroup of men with PVPS who are thought to suffer due to epididymal congestion which presents with a significantly dilated, boggy, epididymis with point tenderness on examination. Although in congestive cases, there is interstitial fibrosis (4), the question arises if men in this category would benefit from the anti-adhesive agent as it seems these men develop pain syndrome due the obstructive effect on the epididymis more than the tissue changes around the site of vasectomy.

As stated by the authors, PVPS is typically a late complication of vasectomy so it may also be useful to assess these comparative tissue changes after a longer duration from vasectomy, perhaps at a 3-month interval rather than at a 2-week interval pos-operatively. As far as experimental design, it may also have been useful to use the anti-adhesive agent adjacent on one vas and not on the other in the same animals to exclude inter-individual animal variability. The authors note this as limitation but that it is a challenge due to Sprague-Dawley rat anatomy. In future study it may also be interesting to see if there is a difference in tissue reaction if metal clips are applied to the vasa as many clinicians use this technique which may result in even more inflammatory tissue responses. Ultimately, this is an elegantly performed pre-clinical animal study demonstrating a tissue benefit of using an anti-adhesive agent in an animal model. A randomized clinical trial, although challenging to power considering the incidence of PVPS, would benefit in the understand of the utility of anti-adhesive agent use at the time of vasectomy clinically and if the reduction of adverse tissue changes demonstrated in this study translate to reduction in clinical PVPS.

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