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## INVITED COMMENTARY

Operational Andrology

### Commentary on “Penile augmentation with injectable hyaluronic acid gel: an alternative choice for small penis syndrome”

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We read with special interest the study by Zhang *et al.*<sup>1</sup> regarding hyaluronic acid penile augmentation for patients with small penis syndrome (SPS). Utilization of hyaluronic acid (HA)-based injections as dermal filler has become increasingly popular in the past decade.<sup>2</sup> For patients who have small penis syndrome, a body dysmorphic disorder in which the patients believe they have a small penis, HA injections present a noninvasive option for penile size augmentation. Current literature on this procedure is sparse, and the findings and experiences reported in Zhang *et al.*<sup>1</sup> are indeed promising in the context of SPS.

The authors conducted a robust retrospective analysis of 38 patients who underwent HA injection penile augmentation between 2017 and 2020. Follow-up data were collected for 1 year (1 month, 3 months, 6 months, and 12 months) and included physical outcomes (flaccid and erect penile length and girth) and psychological measures (Index of Male Genital Image [IMGI], International Index of Erectile Function [IIEF], and Beliefs About Penis Size [BAPS] scales).<sup>1</sup> There was significant increase from baseline in both flaccid and erect length and girth measurements over all follow-up visits. The 1-month follow-up demonstrated the most pronounced increases in girth and length, at  $3.41 \pm 0.95$  cm ( $P < 0.01$ ) and  $2.55 \pm 0.55$  cm ( $P < 0.01$ ), respectively. Increase in penis size decreased after the first follow-up but remained above baseline. There was also significant improvement in IMGI, BAPS, and IMGI subscale (sexual desire, intercourse satisfaction, and overall satisfaction) scores. Interestingly, these subjective scores remained relatively stable throughout follow-up, demonstrating long-term psychological benefits, even though objective penile measurements began to decrease. This decrease is attributed to the absorption of HA into the surrounding tissue. Recently developed fillers with enhanced viscosity and cohesivity, and thus longer half-lives, provide increased injection longevity up to 18 months.<sup>3</sup> Reinjection of HA fillers after size decrease has also been considered, but there are no studies that explicitly examine the implications of reinjection.<sup>4</sup>

It is paramount to mention that the results reported herein by Zhang *et al.*<sup>1</sup> suggest that HA injections can be a safe and effective solution for patients with SPS. The positive physical outcomes, duration of such outcomes, and mild postoperative complications such as edema and subcutaneous bleeding are consistent with existing literature.<sup>3-6</sup> Similarly, the psychologic measures were congruent with those found in Yang *et al.*,<sup>7</sup> the only other study to measure patient psychologic burden to our knowledge.

Traditionally, multiple strategies have been employed for esthetic penile augmentation, including HA injection as documented above, vacuum pumps, penile extenders, and various surgical interventions such as ligament dissection and dermal fat grafts.<sup>1</sup> In comparison to noninvasive treatments, HA injections are often considered longer-lasting and more convenient. Critically, the authors explained when compared to surgical penile augmentation procedures, HA injection is a less invasive treatment modality with lower morbidity.<sup>1</sup>

Finally, as we witness increased demand for esthetic penile augmentation worldwide, we believe the authors of this article provided a timely and robust longitudinal analysis of their own experience with HA injections in the context of SPS - with the inherited limitations of ambiguous indications for SPS treatment, lack of a standard treatment algorithm, and the preexistent knowledge gap in HA safety and efficacy. In conclusion, the use of HA injections is not a permanent solution; however, it can be a viable temporary option for men with SPS. Long-term safety and effectiveness data of HA injections where patient satisfaction and objective penile measurements, as measured end points, are greatly warranted as the urologic community begins to accept, disseminate, and offer such treatment.

#### COMPETING INTERESTS

Both authors declare no competing interests.

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