

# Treatment of Peyronie's disease via preoperative intralesional collagenase clostridium histolyticum followed by placement of an inflatable penile prosthesis: the new standard of care?

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Penile prosthetic surgery via insertion of an inflatable penile prosthesis (IPP) is well established as the gold standard for patients with Peyronie's disease and concurrent, severe erectile dysfunction (ED). For these patients, correction of curvature, erectile strength, and penile shortening have a significant impact on overall satisfaction and quality of life (1,2).

In previous research on the use prosthetic penile surgery in men with Peyronie's disease, evidence exists to suggest that these patients should be limited to primarily "girth-only" models such as the AMS CX700 and Coloplast Titan (3). This treatment paradigm was initially based upon data by Montague *et al.* (4) obtained in the early 1990's. In that study, the authors compared outcomes in Peyronie's disease patients who received a girth-enhancing IPP (AMS CX700) to those who received a girth and lengthening-enhancing IPP (AMS Ultrex/LGX). The Ultrex group gained an average of 1.8 cm in penile length but were also more likely to have residual curvatures and require additional corporoplasties and repair (4). Those men with the more rigid, girth-enhancing prostheses produced improved outcomes in hardness with decreased residual curvatures (4). Unfortunately, this was at a cost of potential penile length—a major concern for many men with ED and Peyronie's disease. As such, no optimal treatment exists for men wishing both girth and length expansion in presence of severe ED requiring placement of an IPP.

Recent advances in the non-surgical management of Peyronie's disease offer a means to optimize men prior

to prosthetic surgery to maximize penile length. It is tempting to speculate that *by reducing pre-operative curvature*, patients may conceivably achieve improved curvature resolution along with enhanced results gained through placement of a girth and length-enhancing prosthesis. Intra-lesional injection therapy with collagenase clostridium histolyticum (CCH) has produced significant reductions in penile curvature and patient bother in phase 2b and phase 3 clinical trials (5,6). Furthermore, there is emerging evidence in the form of small case series which suggest that surgical intervention post-CCH treatment is both safe and effective.

When considering men with residual curvature post CCH intra-lesional therapy, Levine *et al.* (7) reported on seven men who underwent tunica-albuginea plication (TAP) or partial plaque excision and grafting (PEG). All seven men achieved functional straightness without any anatomical difficulties or surgical complications - despite prior CCH treatment (7). Insertion of an IPP post-CCH has also been reported. In their retrospective series, Hellstrom *et al.* (8) studied 10 men who underwent surgical intervention for persistent curvature via penile plication, plaque incision/grafting, or placement of an IPP. Increased fibrosis was noted in the operative reports of three patients; however this finding did not negatively affect outcomes overall (8).

Specifically, with regards to the IPP, a total of three patients underwent IPP insertion post-CCH injection. Mean pre- and post-operative curvatures were 58° and 15°

respectively – a very substantial improvement. While the type of implant used was not specified, this early reports confirms the safety of surgery post-CCH (8). Together, these two small case series suggest that men with residual curvature post-CCH can achieve favorable results with surgery, including IPP insertion.

Optimum timing of IPP insertion post-CCH treatment has yet to be determined. Mean time from final CCH injection to surgical intervention was 150.9 days (~5 months) in the Hellstrom (8) series and 182 days (~6 months) in the Levine series (7). It is interesting to note that in two of the three cases with increased fibrosis in the Hellstrom series, all were done <100 days from the last CCH injection. Based on these findings alone, a wait time of >6 months post-CCH was proposed (8).

For patients with ED and Peyronie's disease who are particularly troubled by the prospect of a reduction in penile length, pre-operative optimization with a full CCH course may increase their chances of successful use of a lengthening-type IPP. This would allow prosthetic surgeons to better address a substantial concern in Peyronie's disease patients and potentially improve overall operative satisfaction for these men.

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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