

APPENDIX

| Supplementary Table 1. Population, interventions, comparators, outcomes, type of studies, and setting (PICOTS) criteria used in the present review of the literature | |
|---|--|
| Inclusion | |
| Population | Age >18 years Diagnosis: gender dysphoria |
| Interventions | Patients undergoing penile inversion vaginoplasty transition surgery (male-to-female) |
| Comparators | Transgender patients and urinary complications |
| Outcomes | UTI, urethral stricture, meatal stenosis, urethral injury and other surgical complications, retention, incontinence, poor or splayed stream, irritative symptoms, revision surgeries for urinary complications, and satisfaction |
| Type of studies | All available clinical and retrospective comparative studies reporting patients undergoing penile inversion vaginoplasty and urinary complications. Published up to July 2020. |
| Timing and setting | Any time point and setting |

| Supplementary Table 2. Risk of bias assessment with ROBINS-I tool | | | | | | | | |
|--|--------------------------------|--|--|---|---------------------------------|--|---|---------------------|
| Study | Bias due to confounding | Bias in selection of participants | Bias in measurements of interventions | Bias due to departures from intended interventions | Bias due to missing data | Bias in measurement of outcomes | Bias in selection of the reported result | Overall risk |
| Amend 2013 | Low risk | Low risk | Low risk | Low risk | Low risk | Moderate risk | Low risk | Moderate risk |

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|-----------------|---------------|-------------|----------|---------------|---------------|---------------|---------------|---------------|
| Blanchard 1987 | Moderate risk | Severe risk | Low risk | Low risk | Low risk | Low risk | Low risk | Severe risk |
| Bouman 1988 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Moderate risk | Moderate risk | Moderate risk |
| Buncamper 2016 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Moderate risk |
| Cristofari 2019 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Moderate risk |
| Eldh 1993 | Moderate risk | Low risk | Low risk | Low risk | Moderate risk | Moderate risk | Severe risk | Severe risk |
| Falcone 2017 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Moderate risk | Moderate risk | Moderate risk |
| Gaither 2018 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Low risk | Low risk | Moderate risk |
| Goddard 2007 | Moderate risk | Low risk | Low risk | Low risk | Moderate risk | Low risk | Moderate risk | Moderate risk |
| Hoebeke 2005 | Moderate risk | Low risk | Low risk | Low risk | Severe Risk | Moderate risk | Moderate risk | Severe risk |
| Huang 1995 | Moderate risk | Low risk | Low risk | Low risk | Severe Risk | Moderate risk | Moderate risk | Severe risk |
| Ives 2018 | Moderate risk | Low risk | Low risk | Low risk | Moderate Risk | Moderate risk | Low risk | Moderate risk |
| Karim 1995 | Moderate risk | Low risk | Low risk | Moderate risk | Low Risk | Moderate risk | Low risk | Moderate risk |
| Krege 2001 | Moderate risk | Low risk | Low risk | Low risk | Low Risk | Moderate risk | Low risk | Moderate risk |
| Lawrence 2006 | Moderate risk | Low risk | Low risk | Low risk | Low Risk | Moderate risk | Low risk | Moderate risk |
| Levy 2019 | Low risk | Low risk | Low risk | Low risk | Low Risk | Low risk | Moderate risk | Low risk |

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|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Loree 2020 | Moderate risk | Low risk | Low risk | Low risk | Moderate Risk | Low risk | Low risk | Moderate risk |
| Massie 2018 | Low risk | Low risk | Low risk | Low risk | Low Risk | Moderate risk | Low risk | Low risk |
| Neto 2012 | Moderate risk | Low risk | Low risk | Low risk | Low Risk | Low risk | Low risk | Low risk |
| Opsome 2018 | Moderate risk | Low risk | Moderate risk | Low risk | Low Risk | Low risk | Low risk | Moderate risk |
| Papadopoulos 2017 | Moderate risk | Low risk | Low risk | Low risk | Moderate Risk | Low risk | Low risk | Moderate risk |
| Perovic 2000 | Moderate risk | Moderate risk | Low risk | Low risk | Moderate Risk | Low risk | Moderate risk | Moderate risk |
| Raigosa 2015 | Moderate risk | Low risk | Low risk | Low risk | Moderate Risk | Low risk | Low risk | Moderate risk |
| Revol 2006 | Moderate risk | Low risk | Low risk | Low risk | Low Risk | Moderate risk | Low risk | Moderate risk |
| Stein 1990 | Moderate risk | Moderate risk | Low risk | Moderate risk | Moderate risk | Low risk | Moderate risk | Moderate risk |
| Tavakkoli-Tabassi 2014 | Moderate risk | Low risk | Low risk | Low risk | Low risk | Moderate risk | Low risk | Moderate risk |
| Van Noort 1993 | Moderate risk | Low risk | Moderate risk | Low risk | Low risk | Low risk | Low risk | Moderate risk |

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| Supplementary Table 3. Surgical complications and revision surgeries conducted | | | | | | | |
|---|----------|-------------------------|------------------------|-------------------------|----------------------|--|--|
| Study | n | Wound dehiscence | Urethral injury | Vaginal stenosis | Rectal injury | Other complications | Revision surgery |
| Amend 2013 | 24 | — | 8.3% | — | 4.2% | Neovaginal fistula: 4.2% | — |
| Blanchard 1987 | 22 | — | — | — | — | Rectovaginal fistula: 4.5% | — |
| Bouman 1988 | 55 | — | — | 7.3% | — | — | — |
| Buncamper 2016 | 475 | — | 1.1% | 3.2% | 2.3% | Neovaginal fistula: 0.6% Vaginal prolapse: 3.8% Urethrovaginal fistula: 1.7% | — |
| Cristofari 2019 | 189 | — | 3.1% | 2.6% | — | Rectovaginal fistula: 1.5% | Meatoplasty: 1.1% |
| Eldh 1993 | 20 | — | — | — | — | — | — |
| Falcone 2017 | 69 | 10.5% | — | — | 1.5% | — | Meatoplasty: 13% |
| Gaither 2018 | 330 | 5.2% | 0.6% | 3.0% | 1.5% | Granulation tissue: 7.3% Neovaginal fistula: 3.0% | Urethral revision: 1.5% Urethrovaginal fistula Repair: 1.8% |
| Goddard 2007 | 180 | — | — | 5.0% | — | Neovaginal fistula: 0.9% | Urethral revision 20.0% Meatoplasty: 4.4% Catheter dilatation: 23.3% |

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| | | | | | | | |
|---------------|-----|-------|-------|-------|------|---|---|
| Hoebeke 2005 | 31 | — | | — | — | — | — |
| Huang 1995 | 109 | — | — | 3.7% | — | — | — |
| Ives 2018 | 101 | 29.0% | 10.9% | — | 4.0% | — | — |
| Karim 1995 | 200 | — | — | — | — | — | Unspecified: 17.5% Urethral revision: 3.5% |
| Krege 2001 | 66 | — | 3.0% | — | — | Urethrovaginal fistula: 0.6% | Meatoplasty: 10.6% |
| Lawrence 2006 | 232 | — | — | 8.0% | — | | Urethral revision and labiaplasty: 27% |
| Levy 2019 | 240 | 0.8% | — | 2.1% | — | Rectovaginal fistula: 0.8% Intravaginal darring: 2.5% | Meatoplasty: 0.4% |
| Loree 2020 | 30 | 3.6% | — | — | 6.7% | Urethrovaginal fistula: 3.6% | Meatoplasty: 3.6% |
| Massie 2018 | 117 | 12.0% | — | 4.0% | — | Granulation tissue: 26.0% Intravaginal darring: 20.0% Wound injury: 17.0% | — |
| Neto 2012 | 332 | 33.0% | — | 12.0% | 3.0% | Urethral injury: 4% Rectovaginal fistula: 1.8% Urethrovaginal fistula: 0.3% Vaginal prolapse: 0.3% Wound injury: 9% | Y-V plasty: 40.0% Meatoplasty: 15.0% |

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|-------------------------|-----|------|---|-------|------|--|--|
| Opsomer 2018 | 161 | 0.6% | — | — | — | | Meatoplasty: 5.6% |
| Papadopulos 2017 | 40 | — | — | 2.5% | 7.5% | Wound injury: 7.5% | — |
| Perovic 2000 | 89 | — | — | 6.7% | 1.1% | Urethral prolapse: 2.2% | — |
| Raigosa 2015 | 60 | 6.7% | — | — | 1.6% | Rectovaginal fistula: 3.3% | Catheter dilatation: 3.3% Meatoplasty: 5.0% |
| Revol 2006 | 63 | — | — | — | 1.5% | Rectovaginal fistula: 1.5% Vaginal necrosis: 7.9% | — |
| Stein 1990 | 14 | — | — | 21% | — | Vaginal necrosis: 7.1% | Urethral revision: 7.1% |
| Tavakkoli-Tabassi, 2014 | 112 | — | — | 6.3% | — | Wound injury: 5.4% | — |
| Van Noort 1993 | 27 | — | — | 18.0% | — | Rectovaginal fistula: 3.7% | Meatoplasty: 7.4% |