

ABSTRAK

Latar Belakang: Buried penis merupakan kondisi di mana penis tersembunyi di bawah kulit perut, paha, atau skrotum, baik kongenital maupun didapat. Kondisi ini tidak hanya berdampak pada aspek estetika, tetapi juga dapat menyebabkan masalah fungsional seperti gangguan seksual, kesulitan berkemih, dan peningkatan risiko infeksi. Salah satu struktur yang diduga berperan adalah tunika dartos, lapisan otot halus di bawah kulit skrotum, yang elastisitasnya dipengaruhi oleh ekspresi gen kolagen tipe III (COL3A1).

Tujuan: Menilai perbedaan ekspresi mRNA dan protein COL3A1 pada tunika dartos pasien buried penis dibandingkan kontrol.

Metode: Penelitian analitik cross sectional dengan 14 sampel pasien buried penis dan 10 kontrol. Sampel tunika dartos diambil saat eksisi, ekspresi COL3A1 dianalisis dengan qPCR. Data diuji menggunakan independent t-test dan ANOVA, dengan signifikansi $p < 0,05$.

Hasil: Median usia subjek 7 tahun (1-15 tahun). Terdapat perbedaan bermakna ekspresi COL3A1 antara kelompok buried penis dan kontrol ($p=0,00$). Ekspresi COL3A1 pada buried penis lebih tinggi ($1,37 \pm 0,20$; $p=0,03$) dibandingkan kontrol ($1,02 \pm 0,49$).

Kesimpulan: Ekspresi COL3A1 pada tunika dartos pasien buried penis lebih tinggi dibandingkan kontrol, menunjukkan peran genetik dalam elastisitas jaringan dartos pada kondisi ini.

Kata kunci: buried penis, dartos, kolagen, COL3A1

ABSTRACT

Background: Buried penis is a condition in which the penis is hidden beneath the skin of the abdomen, thigh, or scrotum, either congenitally or acquired. This condition not only affects aesthetics but can also cause functional problems such as sexual dysfunction, difficulty urinating, and increased risk of infection. One of the structures thought to play a role is the tunica dartos, a layer of smooth muscle beneath the scrotal skin, whose elasticity is influenced by the expression of type III collagen gene (COL3A1).

Objective: To assess the differences in mRNA and protein expression of COL3A1 in the tunica dartos of buried penis patients compared to controls.

Methods: This analytic cross-sectional study included 14 samples from buried penis patients and 10 controls. Tunica dartos samples were collected during excision, and COL3A1 expression was analyzed using qPCR. Data were analyzed using independent t-test and ANOVA, with significance set at $p < 0.05$.

Results: The median age of subjects was 7 years (range 1-15 years). There was a significant difference in COL3A1 expression between the buried penis and control groups ($p = 0.00$). COL3A1 expression in buried penis patients was higher (1.37 ± 0.20 ; $p = 0.03$) compared to controls (1.02 ± 0.49).

Conclusion: COL3A1 expression in the tunica dartos of buried penis patients is higher than in controls, indicating a genetic role in dartos tissue elasticity in this condition.

Keywords: buried penis, dartos, collagen, COL3A1