

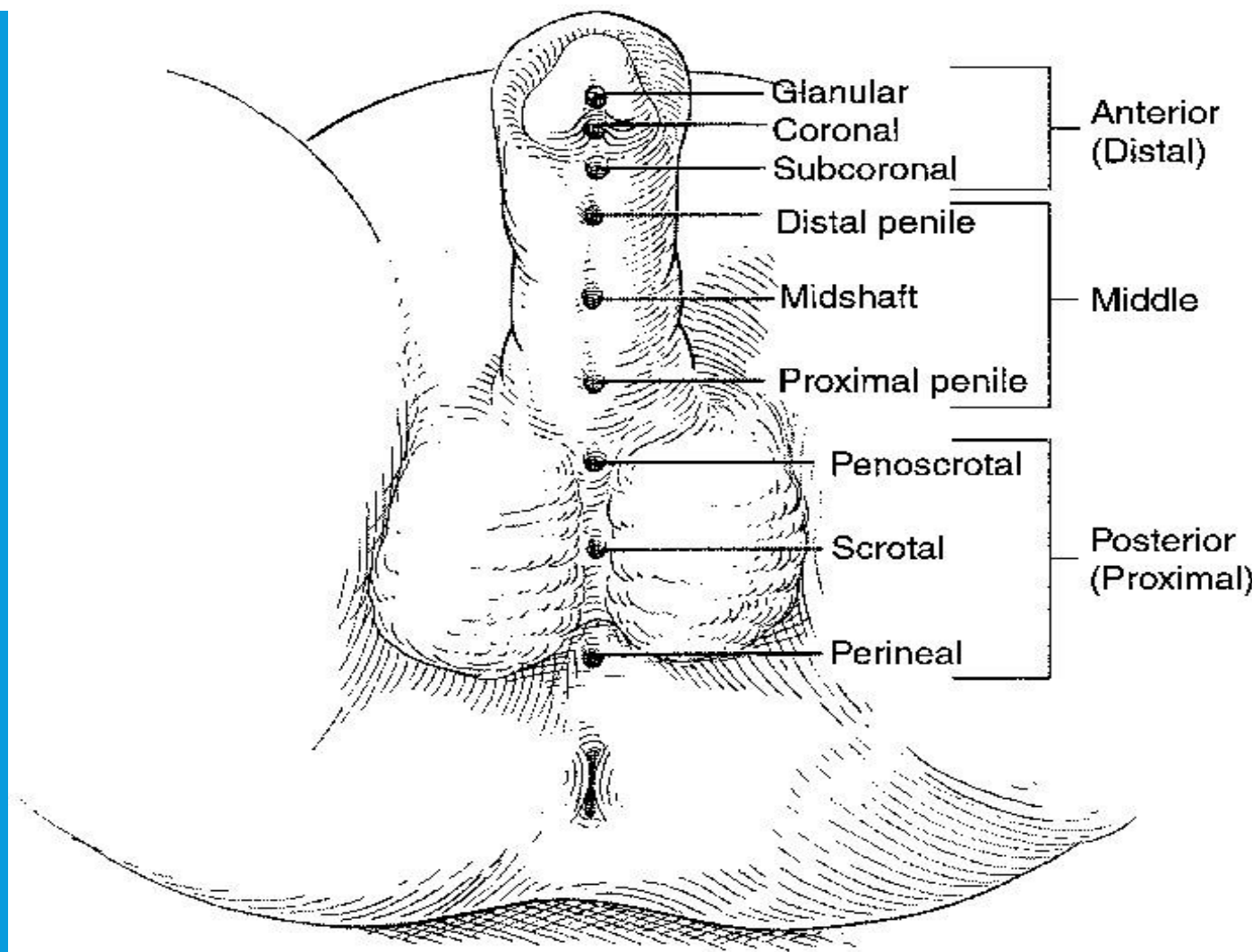
HYPOSPADIAS

INTRODUCTION

- Definition:
 - Any condition in which the meatus occurs on the undersurface of the penis.

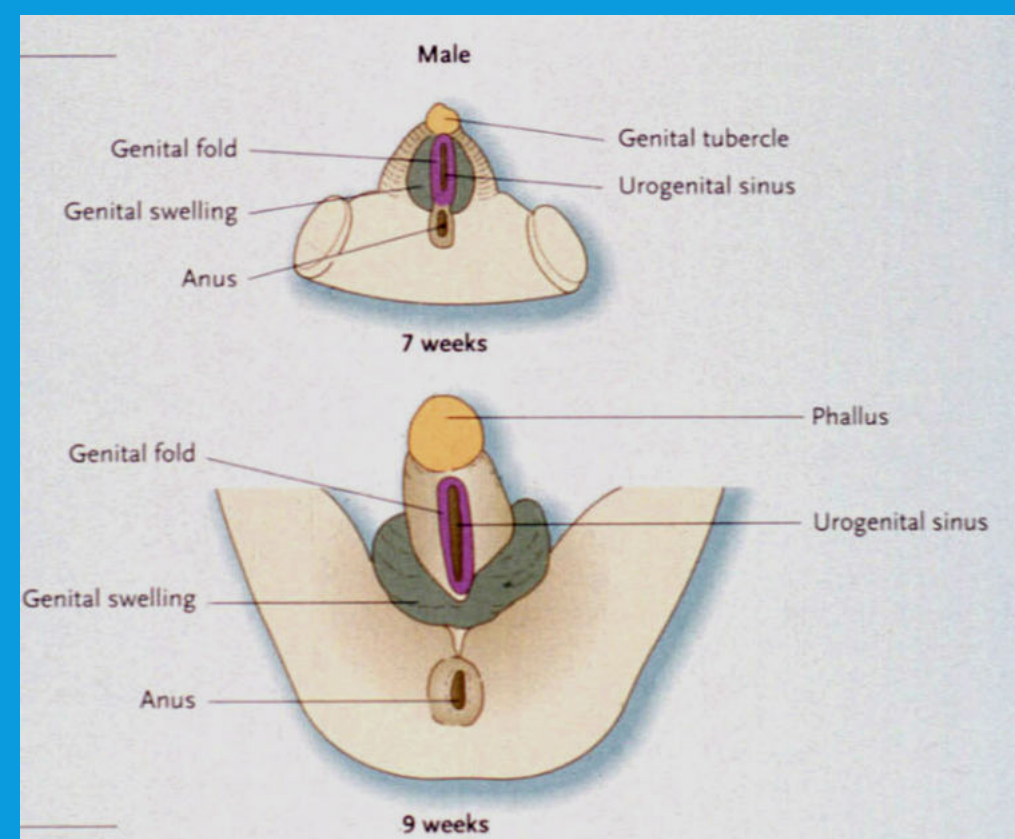
- Usually 3 features
 - **ventral meatus**
 - **ventral curvature (chordee)**
 - **Dorsal "hood"; deficient foreskin ventrally**

TYPES/ CLASSIFICATION



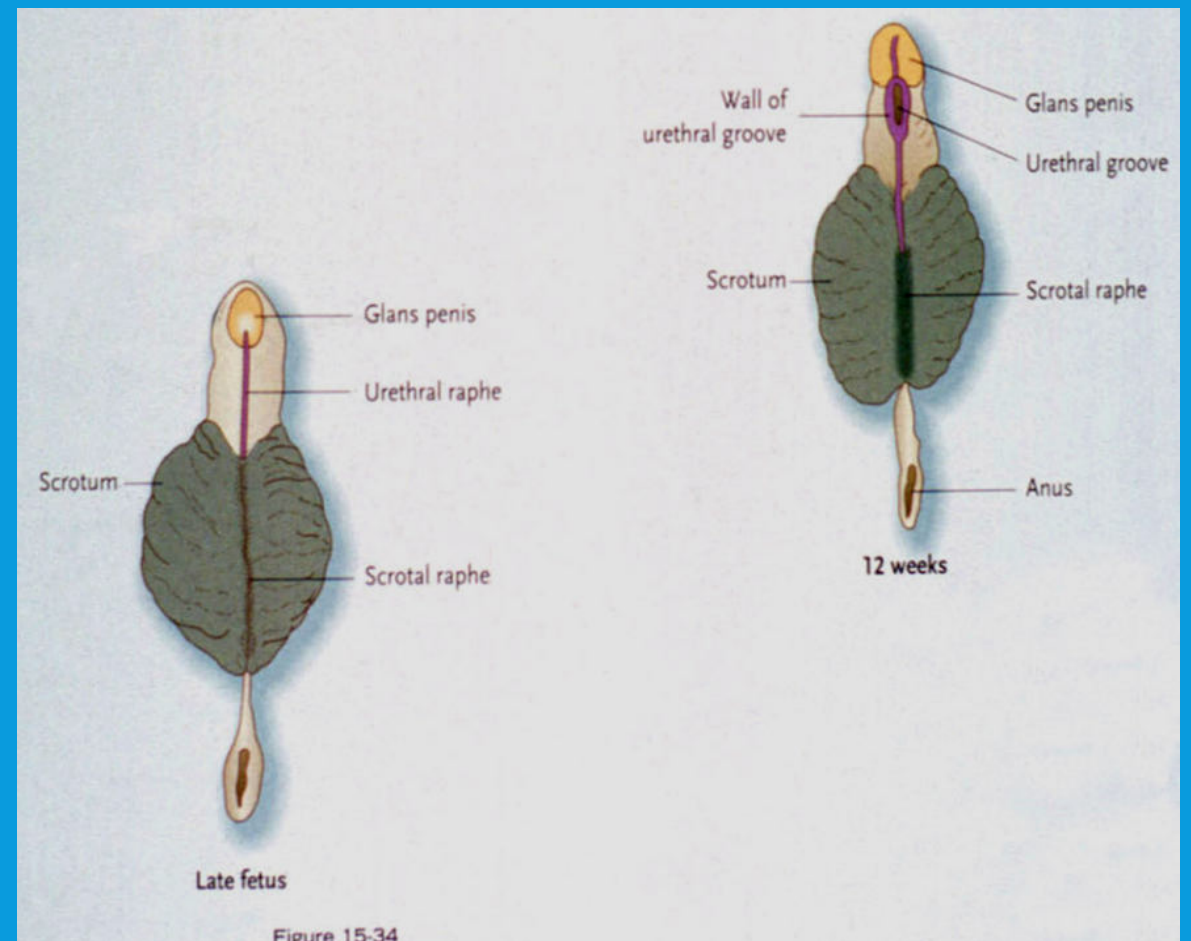
EMBRYOLOGY:

- Genital tubercle fuses in midline
- Mesodermal folds create the urethral and genital folds
- coalesce in midline as phallus elongates
- Distal glans channel tunnels to proximal urethra as solid core then undergoes canalization.



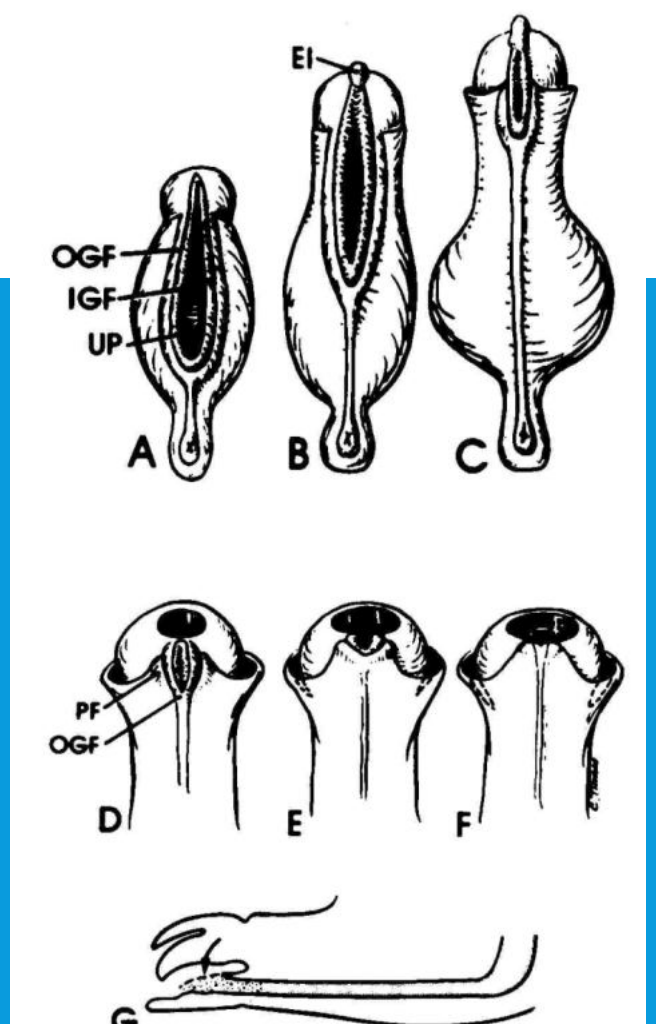
EMBRYOLOGY:

- Prepuce forms as ridge of skin from corona.
- Hypospadias
 - Failure of ventral aspect to form
 - Dorsal hood.
- Chordee
 - Differential growth between normally developed dorsal tissue and underdeveloped ventral corporal tissue
 - Fibrous tissue distal to hypospadiac meatus.



INCIDENCE:

- 1:300 live male births
- Some genetic component
 - 8% of patients have father with hypospadias
 - 14% of patients have male siblings with hypospadias
 - If child with hypospadias, risk to next child
 - 12% risk with negative family history
 - 19% if cousin or uncle with hypospadias
 - 26% if father or sibling
- More common in Caucasians (Jews and Italians)
- Higher incidence in monozygotic twins (8.5x)



ASSOCIATED ANOMALIES:

- Undescended testes 9%
- Inguinal hernia 9%
- Upper tract anomalies rare (1-3%)

Utricle masculinus

- 10 to 15% in perineal or penoscrotal hypospadias
- Incomplete mullerian duct regression

▪ **hypospadias and cryptorchidism**

- high index of suspicion for an intersex state
- Walsh reported the incidence of intersexuality in children with cryptorchidism, hypospadias, and otherwise nonambiguous genitalia to be 27%.
- Only with severe hypospadias and sexual ambiguity
 - Includes testicular abnormalities
 - Up to 25% of these patients have enlarged utricles or other female structures
- Intersex, especially with cryptorchidism
 - Adrenogenital syndrome
 - Mixed gonadal dysgenesis
 - Incomplete pseudohermaphroditism
 - True hermaphroditism

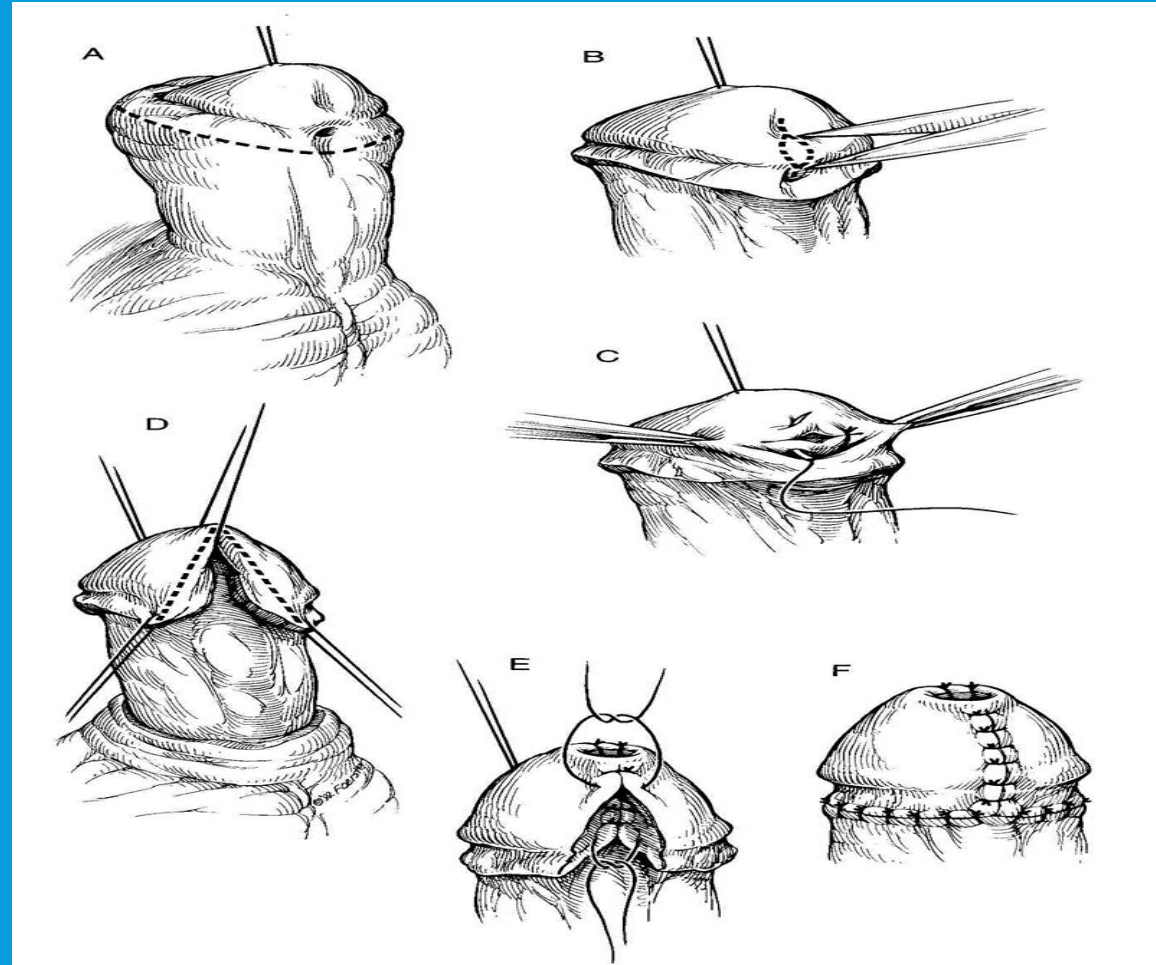
FACTORS FOR TECHNICAL SUCCESS

- Use of vascularized tissues
- Careful tissue handling
- Tension-free anastomosis
- Non-overlapping suture lines
- Meticulous hemostasis
- Fine suture material
- Adequate urinary diversion

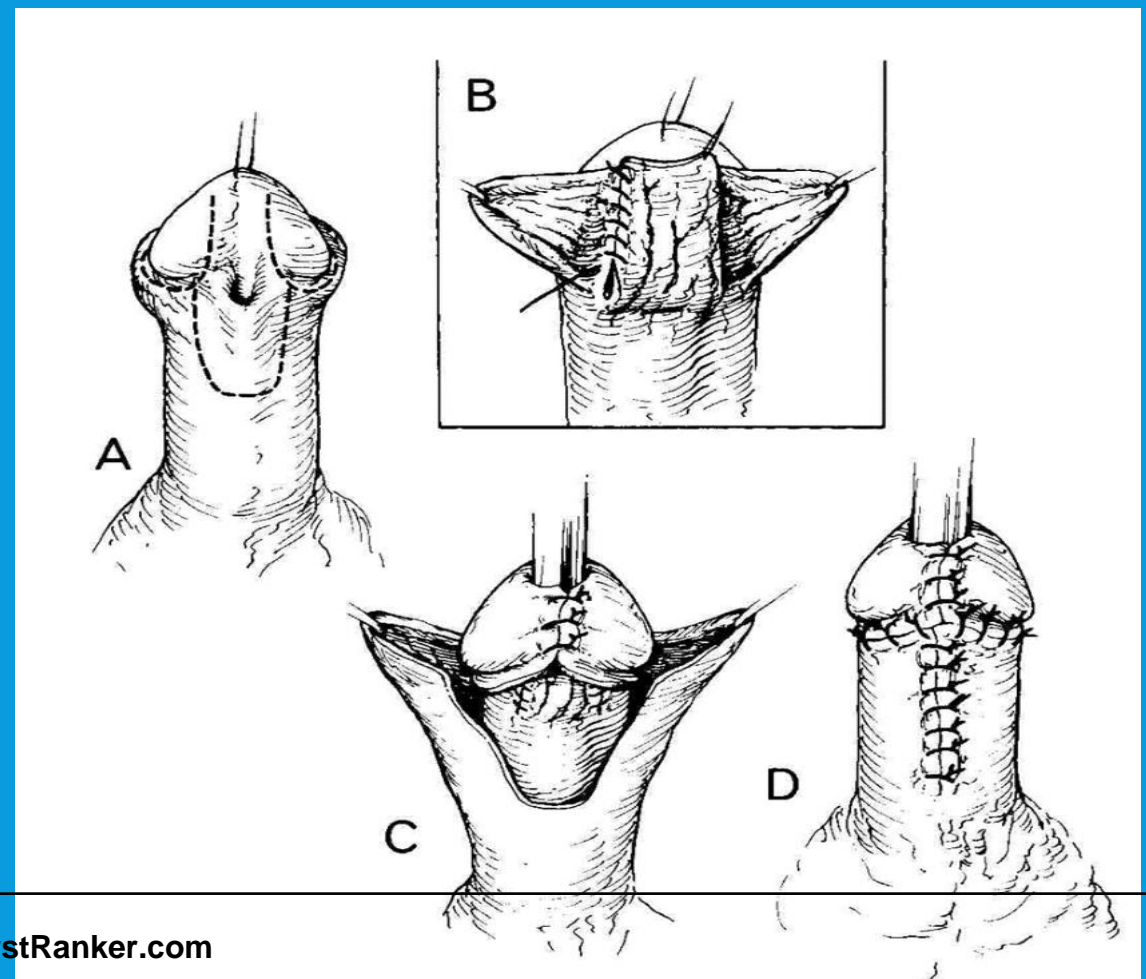
HYPOSPADIAS SURGERIES

- Distal hypospadias
 - Tubulization of the incised urethral plate (Snodgrass)
 - Meatal advancement (MAGPI)
 - Meatal-based flaps (Mathieu)
- Proximal hypospadias
 - Onlay grafts
 - Vascularized inner preputial transfer flaps (Duckett)
 - Free grafts (skin, buccal mucosa)

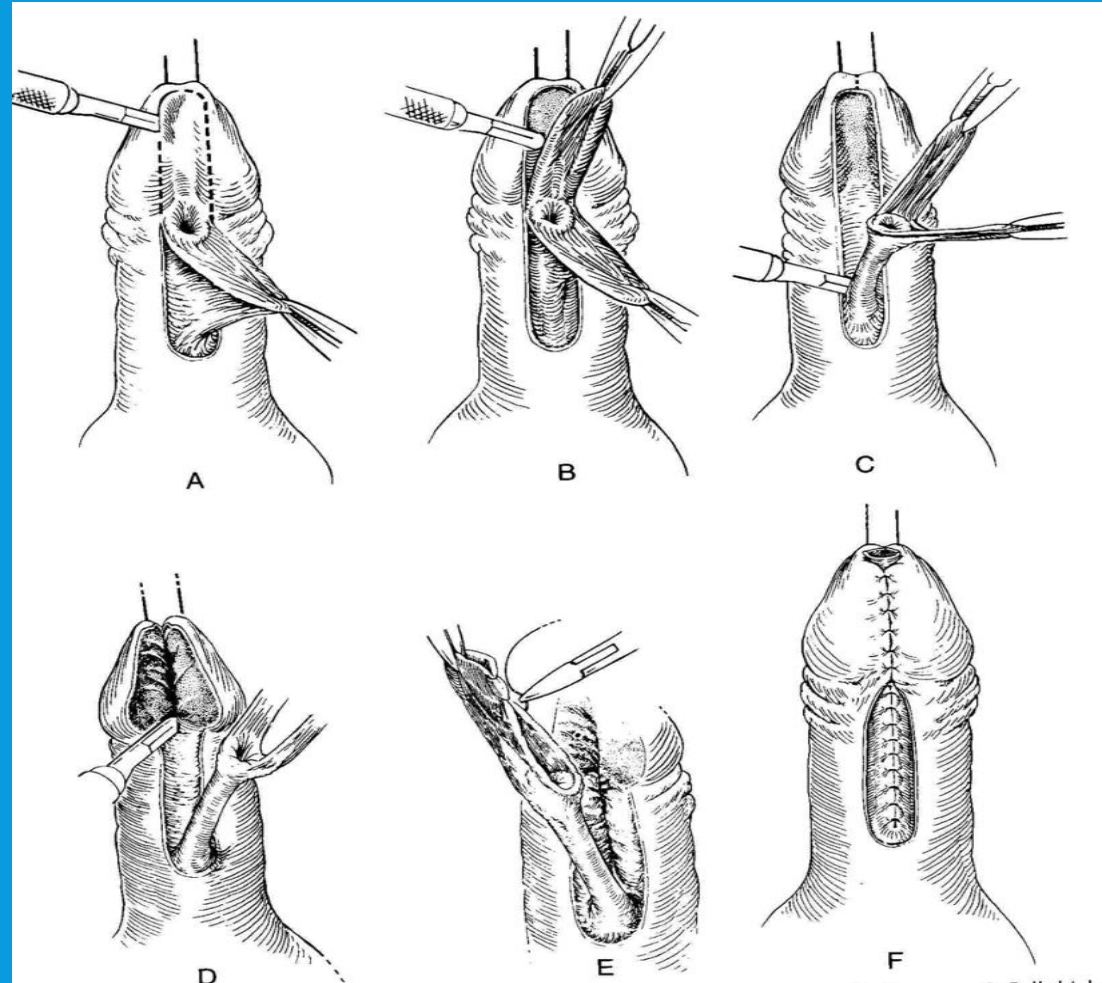
• MAGPI



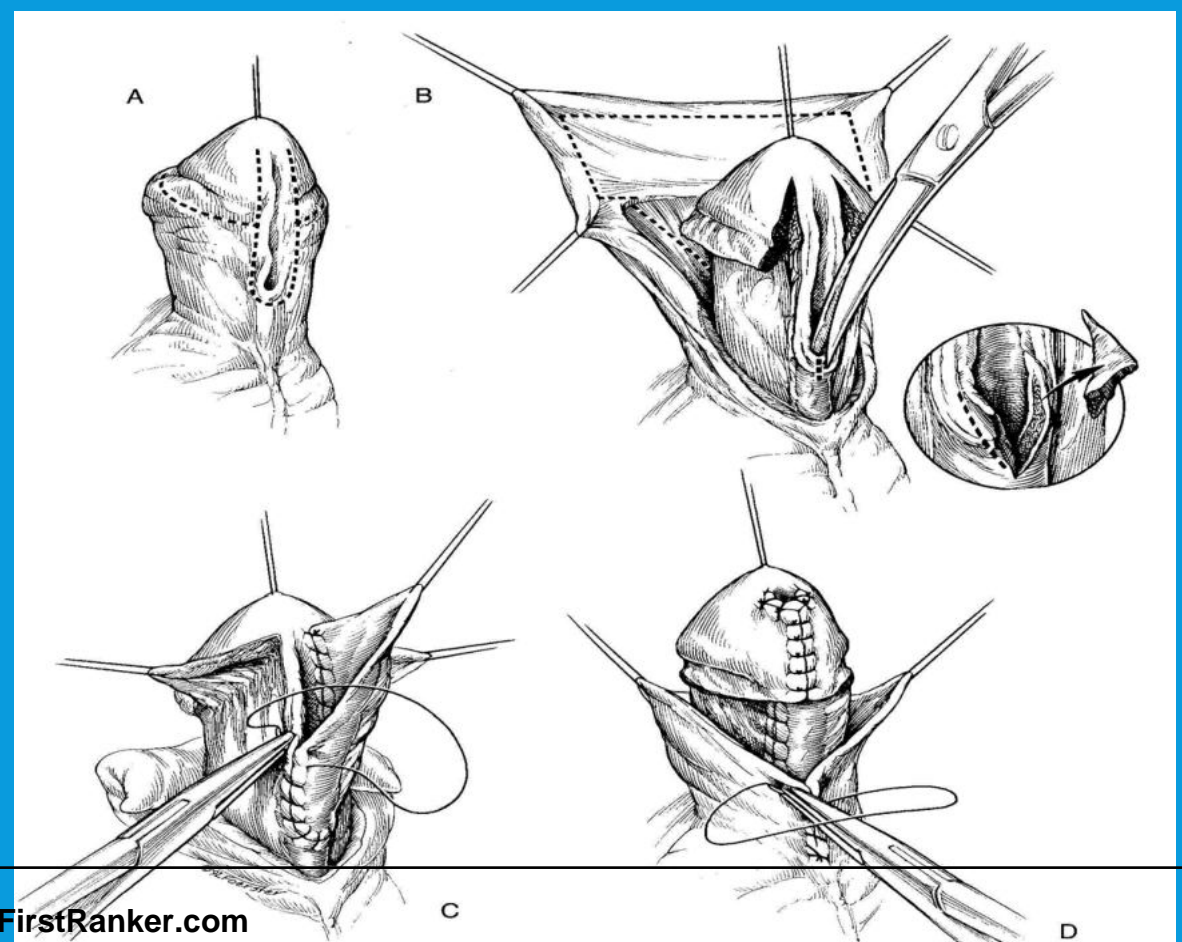
• MATHIEU PROCEDURE



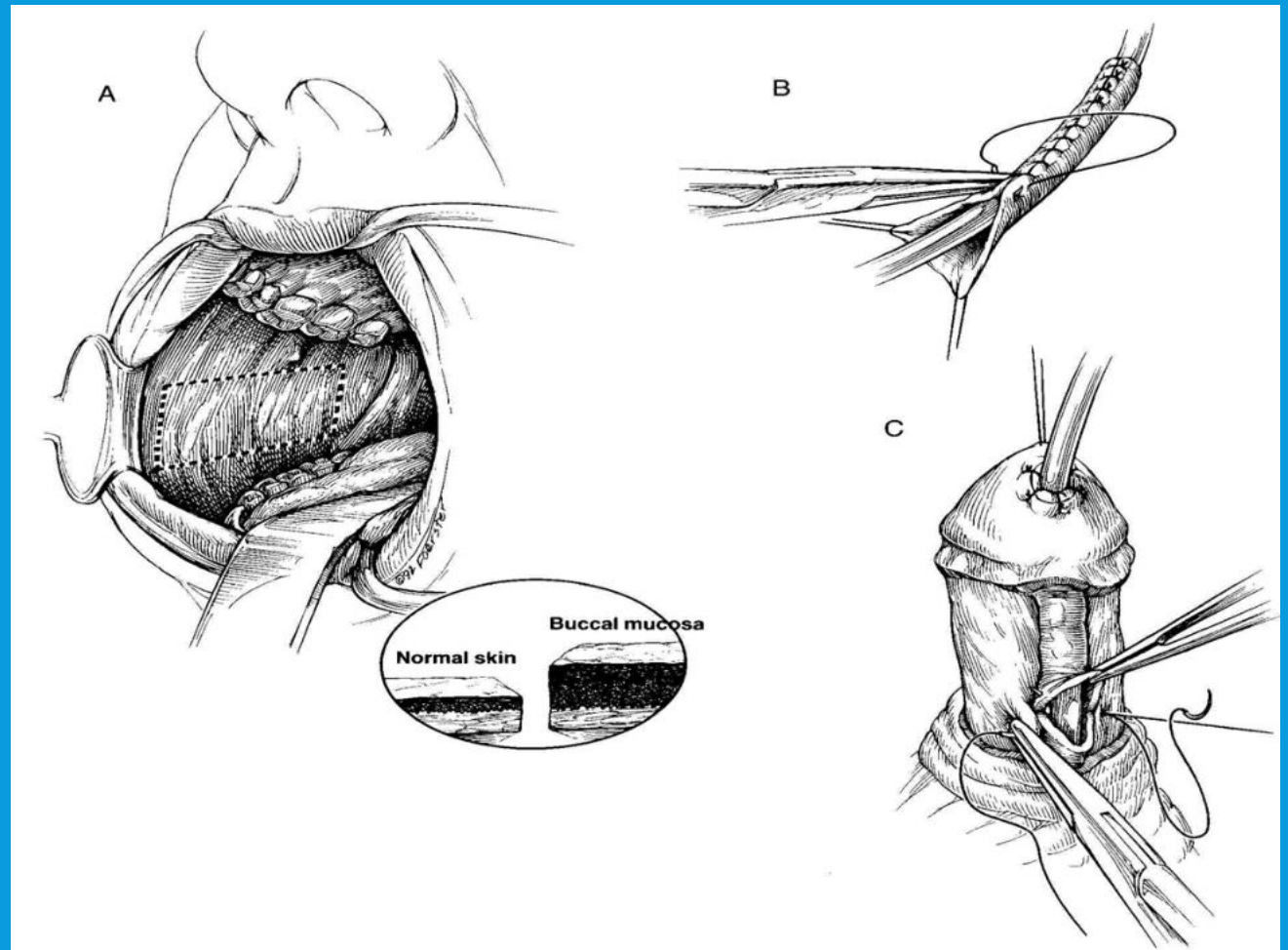
- REDMAN and BARCAT PROCEDURE



- ISLAND ONLY



- BUCCAL MUCOSAL GRAFT



ACUTE COMPLICATIONS:

- Wound infection
- Poor wound healing 2° to ischemia of flaps
- Edema

CHRONIC COMPLICATIONS:

- Urethrocutaneous fistula
- Urethral diverticulum
- Residual chordee
- Persistent hypospadias
- Urethral stricture
- Hair bearing skin
- Meatal stenosis
- Excess skin
- Balanitis xerotica obliterans

HYPOSPDIAS- CONCLUSIONS

- Common
- Genetic component exists
- Evaluation for associated anomalies with severe proximal hypospadias
- Rule out intersex, especially with cryptorchidism
- Multiple repairs exist, tailor to the patient, anatomy, and previous repairs

THANK YOU



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