Vaginoplasty: Buccal Grafts – What is their Role?

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The Sir John Dewhurst Lectureship

Content

- Conditions in Need of Vaginoplasty
- What makes a Vaginoplasty Difficult?
- Surgical Options for Neovaginoplasty
Conditions in Need of Vaginoplasty

1. Congenital Anomalies
2. Acquired Conditions

Congenital Anomalies

<table>
<thead>
<tr>
<th>Congenital Vaginal Anomalies</th>
<th>Vagina (± Uterus)</th>
<th>Urethra (± Ambiguous Genitalia)</th>
<th>Anorectum</th>
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Vaginal Agenesis

Congenital Vaginal Anomalies
- Partial or Complete
- Agenesis
- Obstruction
- Duplication
### Congenital Anomalies

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<tr>
<td>Urogenital Sinus</td>
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**Persistent Cloaca**

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**Congenital Adrenal Hyperplasia (CAH)**

**Low Confluence**

**High Confluence**
### Congenital Anomalies

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**VAGINOPLASTY**

### Acquired Conditions

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**REDO VAGINOPLASTY**

- Vaginectomy for Ca
- Bowel Vaginoplasty Loss
- Postop Vaginal Stenosis
What makes a Vaginoplasty Difficult?

Surgical Level of Difficulty

<table>
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<th>Simpler</th>
<th>More Difficult</th>
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<tbody>
<tr>
<td>1. Imperforate Hymen</td>
<td>1. Vaginal Agenesis</td>
</tr>
<tr>
<td>2. Vaginal Septum / Duplication</td>
<td>2. High Confluence UGS</td>
</tr>
<tr>
<td>3. Low/Mid Confluence UGS</td>
<td>3. Persistent Cloaca</td>
</tr>
<tr>
<td></td>
<td>4. Redo Vaginoplast</td>
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</table>
Factors to Consider Pre-Operatively

**QUANTITY** of Vagina ▸ **LOCATION** of Vagina

Primary or Reoperation ▸ **STATUS of SURGICAL FIELD**

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Surgical Options for Vaginoplasty

The native vaginal tissue is either...

- Totally sufficient for reconstruction *(Pulldown or Reconfiguration)*
- Partial & insufficient for reconstruction *(Composite Vaginoplasty = Native vagina + Neovagina)*
- Absent *(Total Neovagina)*
Surgical Options for Neovaginoplasty

- Progressive Dilation
- Vecchietti
- Bowel Vagina
- Myocutaneous flaps
- Skin grafts/flaps
Neovaginoplasty Concerns

- Dilation failure
- Abdominal surgery complications
- Diminished cosmesis
- Harvest site scarring
- Graft shortening, loss or prolapse
- Neovagina with hair, dryness, or cancer
- Postoperative vaginal stenosis
Neovaginoplasty Concerns

- Dilation failure
- Abdominal surgery complications
- Diminished cosmesis
- Harvest site scarring
- Graft shortening, loss or prolapse
- Neovagina with hair, dryness, or cancer
- Postoperative vaginal stenosis (38-82%)
What causes Vaginal Stenosis?

- Vigorous dissection/mobilization
  -↑ denervation/devascularization
- High tension anastomosis
  -↑ ischemia
- Use of ‘dysplastic’ distal vaginal tissue
  -poorer healing properties

Why a different vaginoplasty?

- Cosmesis can be poor
- Complications occur
- Function can be suboptimal –
  -Lubrication
  -Dyspareunia from vaginal stenosis
- These adult patients are concerned with
  -Sexuality
  -Genital appearance
  -Fertility
Vaginoplasty Alternative

Autologous Buccal Mucosa

Vaginoplasty

Buccal Mucosa

- Thick nonkeratinized, nonhair bearing, elastic, lubricating epithelium with excellent color and texture match to vagina
- Harvest site is hidden inside the mouth
- Harvest site heals very rapidly
Buccal Mucosal Harvest –
One week postoperatively

Pt A: Mayer-Rokitansky (MRKH)-Total ABM Neovagina

Pre-operatively – vaginal agenesis
Total ABMVNeovagina for MRKHS  
6 months Post-op

Total ABMV Neovagina for MRKHS  
3 years Post-op
Total ABMV Neovagina for MRKHS
3 years Post-op -vaginoscopy

Pt B: ABMV for Vaginal Stricture Repair

Urethral Meatus
Hymenal Ring
Vaginal Stricture
Anteriorly Displaced Anus
Outcomes of ABMV

N=57 patients
Mean Age 16 years (range 1-60 years)
2004-current

Vaginal Anomalies with normal urethra
Distal Vaginal Agenesis with normal urethra

Complications (n=4/14)
3 vaginal stenosis
1 tuboovarian abscess

Surgical revision (n=4/14)
3 vaginal stenosis
1 vaginal redundancy

Oral Contracture (n=2/14)

Sexually active 3/6 of age

N=14
9 primary
5 secondary

Total Vaginal Agenesis with normal urethra

Complications (n=2/7)
1 vaginal mold dislodged
1 urethral injury

Surgical revision (n=2/7)
1 vaginal synechiae
1 vaginal foreshortening

Oral Contracture (n=1/7)

Sexually active 5/5 of age

N=7
5 primary
2 secondary
Apical Vaginal Foreshortening postop with normal urethra

Complications (n=0):
- Surgical revision (n=0)
- Oral Contracture (n=0)
- Sexually active 2/3 of age

N=3
0 primary
3 secondary

Complications after Urogenital Sinus Repair
Distal Vaginal Stenosis with short residual UGS

- Complications (n=0/17)
- Surgical revision (n=3/17)
  - 3 restenosis repair
- Oral Skin bridge (n=1/17)
- Sexually active 5/10 of age
  - 1 Pregnancy

N=17
0 primary
17 secondary

ABMV ≈ Vaginal Mucosa

- Surveillance biopsies
- n=16 pts at mean 9.6 mo F/U
- No evidence of dysplasia or malignant degeneration was seen in any specimens. In all cases, pathology was unable to diagnose the specimen as originating from an ABMV site – called it vaginal mucosa.

DaJusta, et al. AUA meeting abstract, 2011
Surgeon vs Patient Centered ABMV Outcomes

Grimsby, Bush, Baker AUA 2014 Abstract

Buccal Mucosa Vaginoplasty

Lin et al. 2003, Taiwan
- 8 pts MRKH
- Bladder injury, vaginal bleeding
- 8 cm x 2 fingers

Ozgenel 2003, Turkey
- 4 pts MRKH
- No stenosis
- Satisfactory sexual intercourse
- 8 cm x 4 cm

No reports of its use for vaginal stenosis or intersex conditions.
Buccal Mucosa Vaginoplasty

PROS
- Hidden donor scars
- Moist, hairless, nonkeratinized mucosa with excellent color and texture
- No bowel/abdominal surgery
- No unpleasant bowel mucous produced

Conclusions
- There is need for improved vaginoplasty methods.
- When vagina is in short supply, vaginoplasty is more complex with increased risks.
- Autologous Buccal Mucosa Vaginoplasty gives excellent early results in complex repairs.
# Publications


