Surgery for Peyronie’s disease

A) Reconstructive surgery

- **Shortening**
  - plication, wedge resection (many modifications)
- **Lengthening** (excision or incision + grafting)
  - **Autologous** - dermis, tunica vaginalis, buccal mucosa, saphenous vein, temporalis fascia
  - **Synthetic** - Goretx, silastic, Dacron
  - **Cadaveric** - Tutoplast (human pericardium)
  - **Surgisis ES™** (porcine small intestine submucosa)
  - **Xenform™** (acellular bovine dermal matrix)

B) Prosthesis with or without grafting or molding

The 16 dots procedure
Modified 16 dot

Longitudinal Incision

Marking and Suture Placement

Pre-op and Post-op Comparison
2 Weeks Post-Operative

Indications for grafting

Potent
Short penis
Severe indentation or narrowing
Severe curvature

Surgisis® Biodesign™ Histology

Histology of Surgisis® Biodesign™ shows that it is primarily composed of laminated collagen and is acellular in nature. This staining does not permit identification of non-Collagenous components.

Natural Extracellular Matrix:

Some Components found in Surgisis® Biodesign™

Range of additional components

- Proteins
- Carbohydrates
  - Glycosaminoglycans (GAG): 5 types
  - Proteoglycans
  - Glycoproteins: Laminin, Fibronectin
- Collagens: Type I, Type III, Type IV, Type V, Type VI
- Growth Factors: TGF-2, CTGF, TGF-

Tutoplast Human Pericardium

Photomicrograph of Tutoplast processed human pericardium. Note the absence of cells; and retention of an intact ECM. Hematoxylin and Eosin stain. 200X magnification.

Color code
- Red: Collagen
- Black: Nuclei
- Yellow: Muscle, cytoplasm

Human Pericardium: Verhoeff Van-Gieson

Photomicrograph of Tutoplast processed bovine pericardium. Note the retention of an intact ECM and of elastin (black). Verhoeff Van-Gieson stain. 200X magnification.

Color code
- Red: Collagen
- Grey: Nuclei
- Black: Elastin
- Yellow: Muscle, cytoplasm
Histological Results:
Summary

The Tutoplast® Process

- Does not fundamentally change the biomechanical or biologic properties of the tissue matrix.
- Removes cellular debris from the collagen matrix.
- Leaves the elastic fiber system intact.
- Does not disturb the undulating fibers of the pericardial tissue matrix.

SIS VS Tutoplast

Challenge Point #1
Dissecting the Neurovascular Bundle

Challenge Point #2
Assess Pathology with Tumescence

Mobilize Urethra

Excise Focal Area of Pathology

Sew Patch and Re-inject
Complications

- Plication
  - Shortening
  - Palpable nodule
  - Persistent pain
  - Recurrence

- Grafting
  - Shortening
  - Numbness
  - Impotence
  - Recurrence
  - Incomplete correction
  - Hematoma with artificial materials

My Protocol after Patch Graft

- Post-operative Formula:
  - Compression dressing + foley catheter overnight
  - Closed suction drain for 24 hours for patch graft only
  - Resume Trental (pentoxyphylline) 400mg bid or tid after 7-10 days
  - Chronic low doses of oral pde type 5 inhibitor after 7 days
  - If only patch, then ved qd starting 4 weeks post surgery
Conclusion

• Surgery not first line but is the only definitive treatment.
• Many basic science efforts under way to analyze established and new agents for conservative therapy