

# CYSTOSCOPY 101

# Lower Urinary Tract Injuries

- **50-75% of all unintentional ureteral injuries occur during GYN procedures**
- **Incidence of ureteral injury during a major GYN surgery ranges between 0.4% to 2.5%**
- **Less than 12% of ureteral injuries and less than 52% of bladder injuries were identified and repaired intraoperatively**

# Lower Urinary Tract Injuries and Urogynecologic Procedures

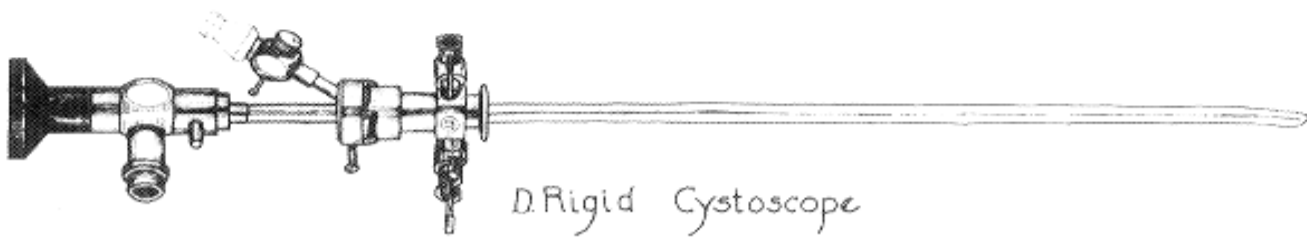
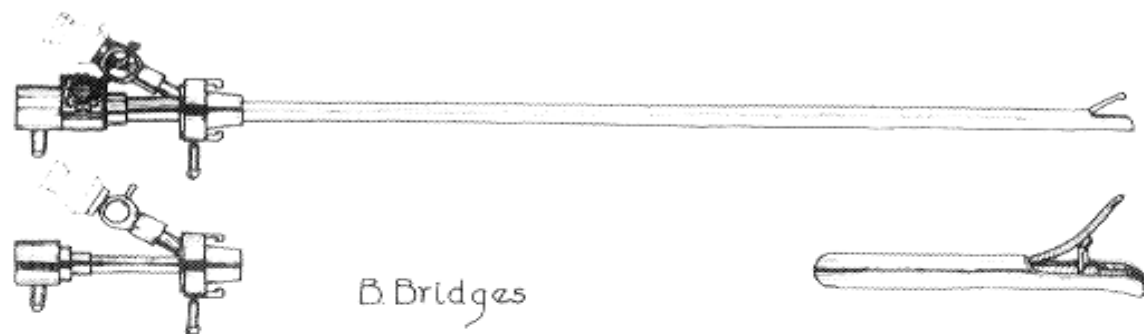
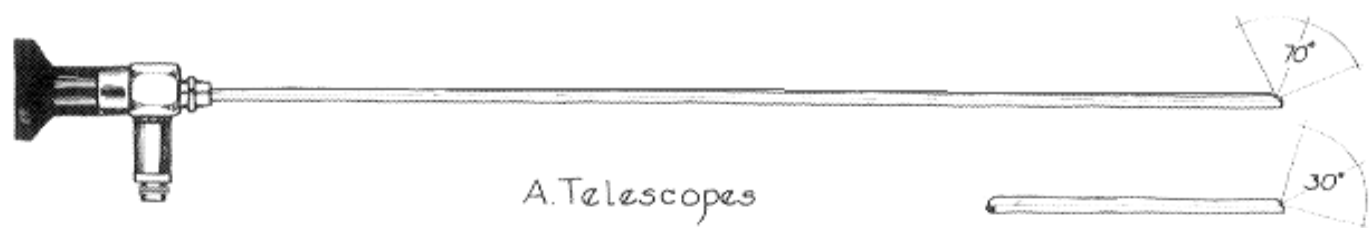
- Reports in the urology literature have documented the incidence of LUT injury with Burch urethropexy to be about 6%
- Two recent articles in the OB/GYN literature observed the incidence of LUT injury with Burch urethropexy to be **10%**

# Lower Urinary Tract Injuries – The Good News

- When surgeons routinely performed cystoscopy, 90% of the ureteral injuries and 85% of bladder injuries were identified
- In about 70% of these cases the management involved merely removing and replacing the offending sutures or closing the cystotomy

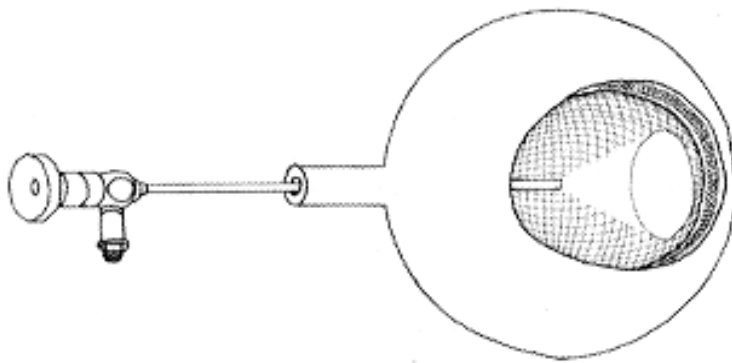
Gilmour DT, Dwyer PL, Carey MP. Lower urinary tract injury during gynecologic surgery and its detection by intraoperative cystoscopy. *Obstetrics and Gynecology*. 1999;94:883-889.

# CYSTOSCOPIC INSTRUMENTS

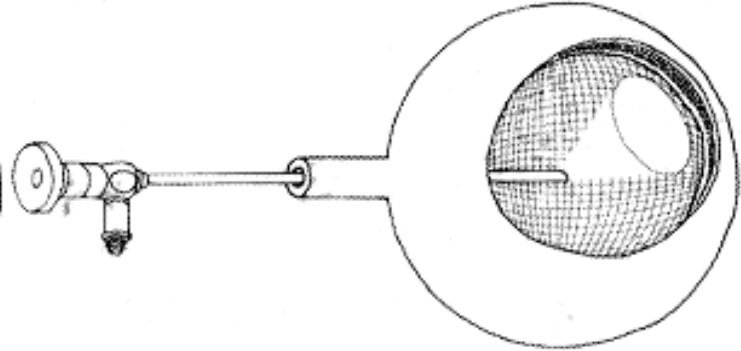


G. CUNIFF, MD

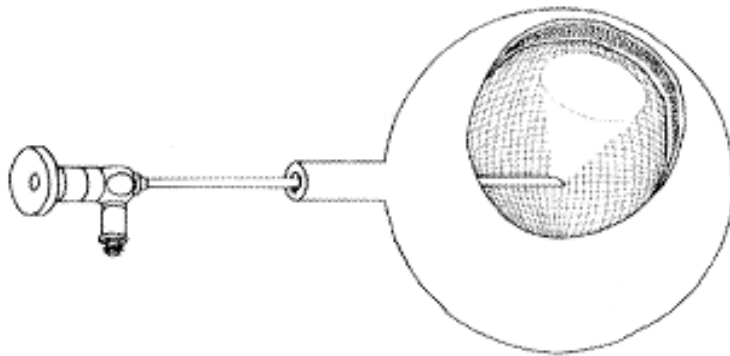
# Angled Telescopes



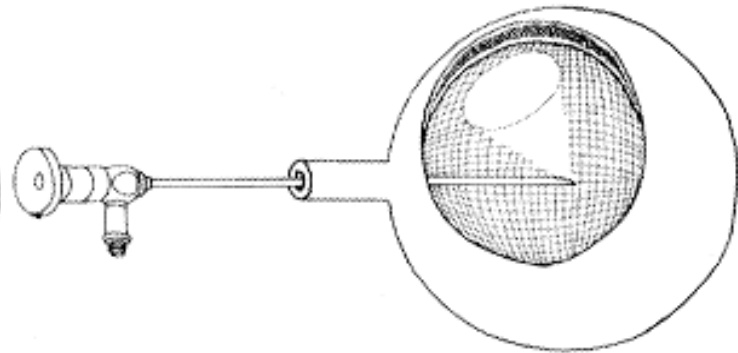
0 Degree



30 Degrees

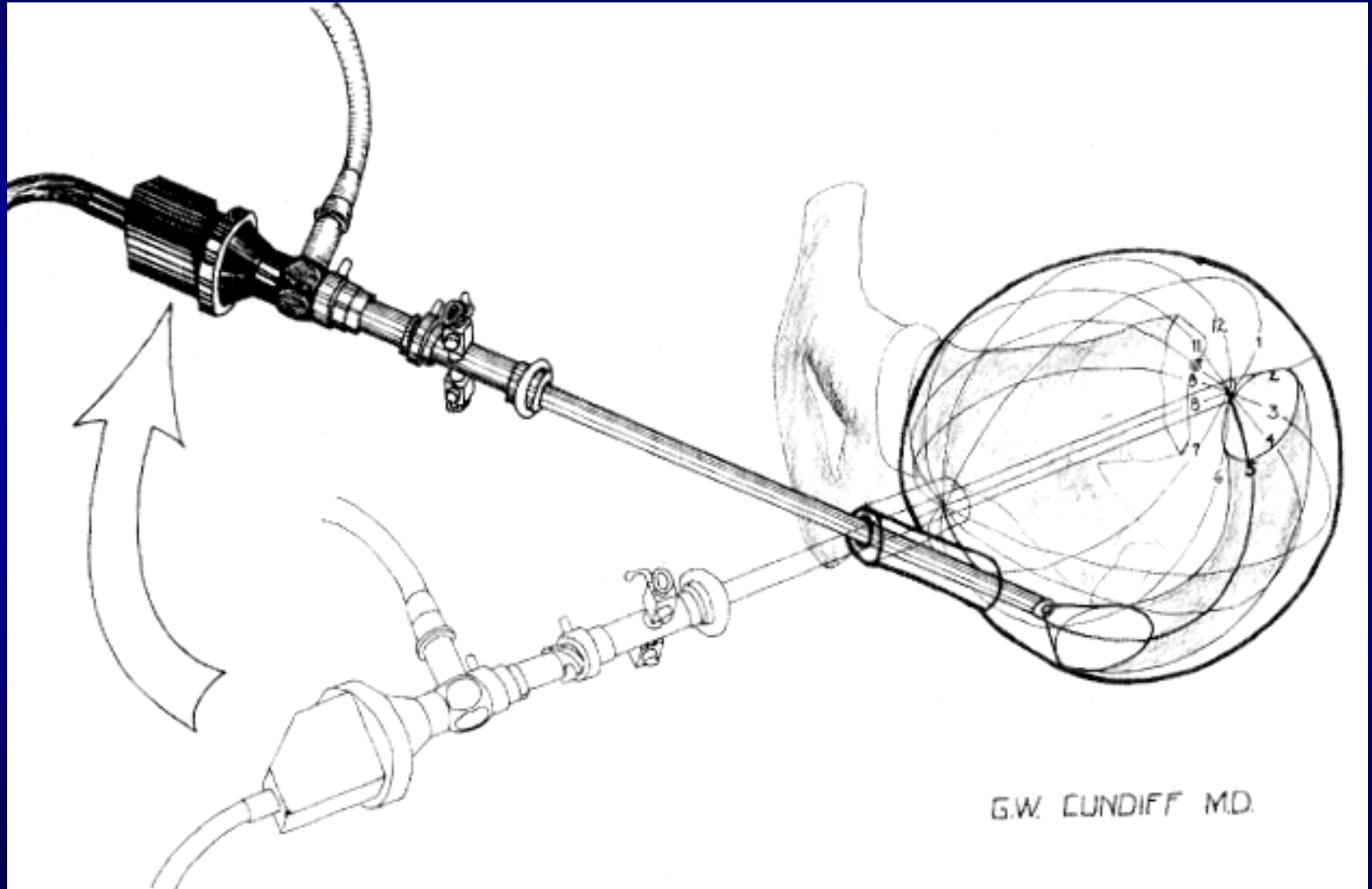


70 Degrees

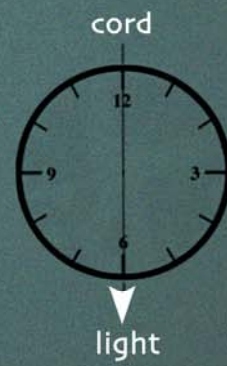
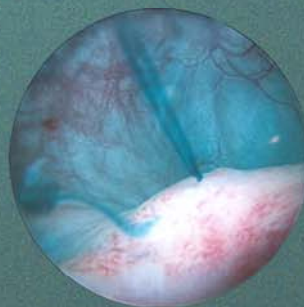
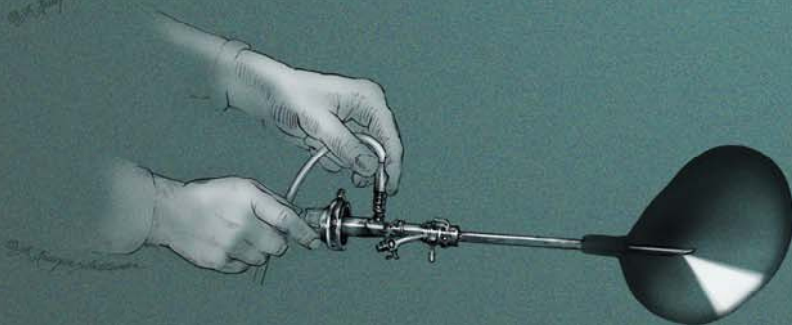
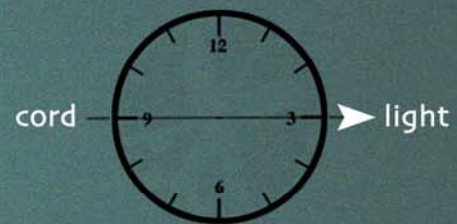
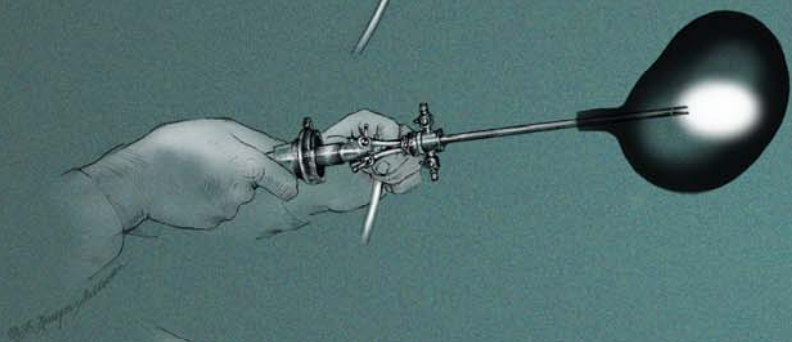
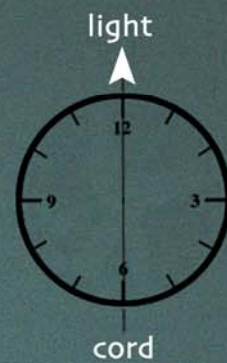
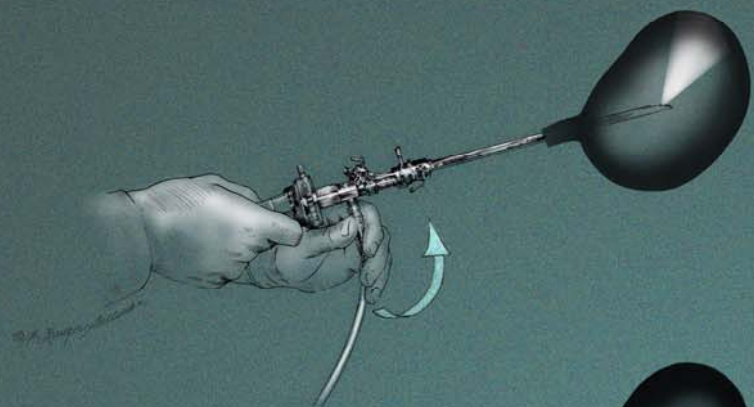


120 Degrees

# Cystoscopic Sweep







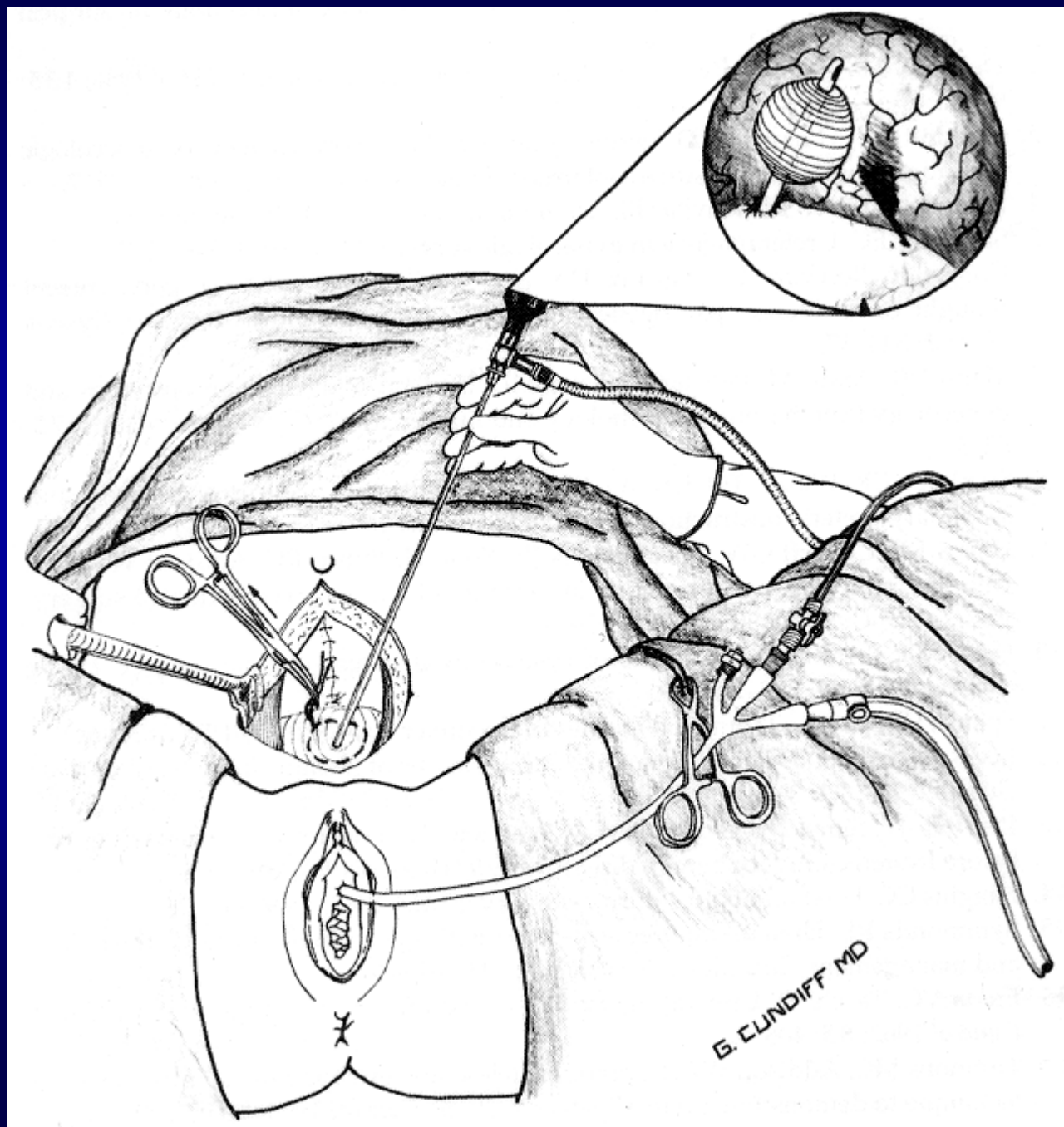


# Transurethral Cystoscopy

## What to Call for:

- Cystoscope with 21 Fr Sheath
- 70 degree lens
- Cystoscopic tubing and **ONE LITER** bag of sterile water
- 5 cc indigo carmine for IV injection
- Camera (optional)

# SUPRAPUBIC CYSTOSCOPY



# Suprapubic Cystoscopy

## What to call for:

- 30 degree telescope alone with light source
- Retrograde fill bladder
  - (a) Three-way Foley (optional)
- 3. Indigo carmine 5 cc for IV injection
- 4. Camera (optional)

# FINDINGS



# Normal Bladder Vasculature





# Dome with Air Bubble



# Normal Trigone

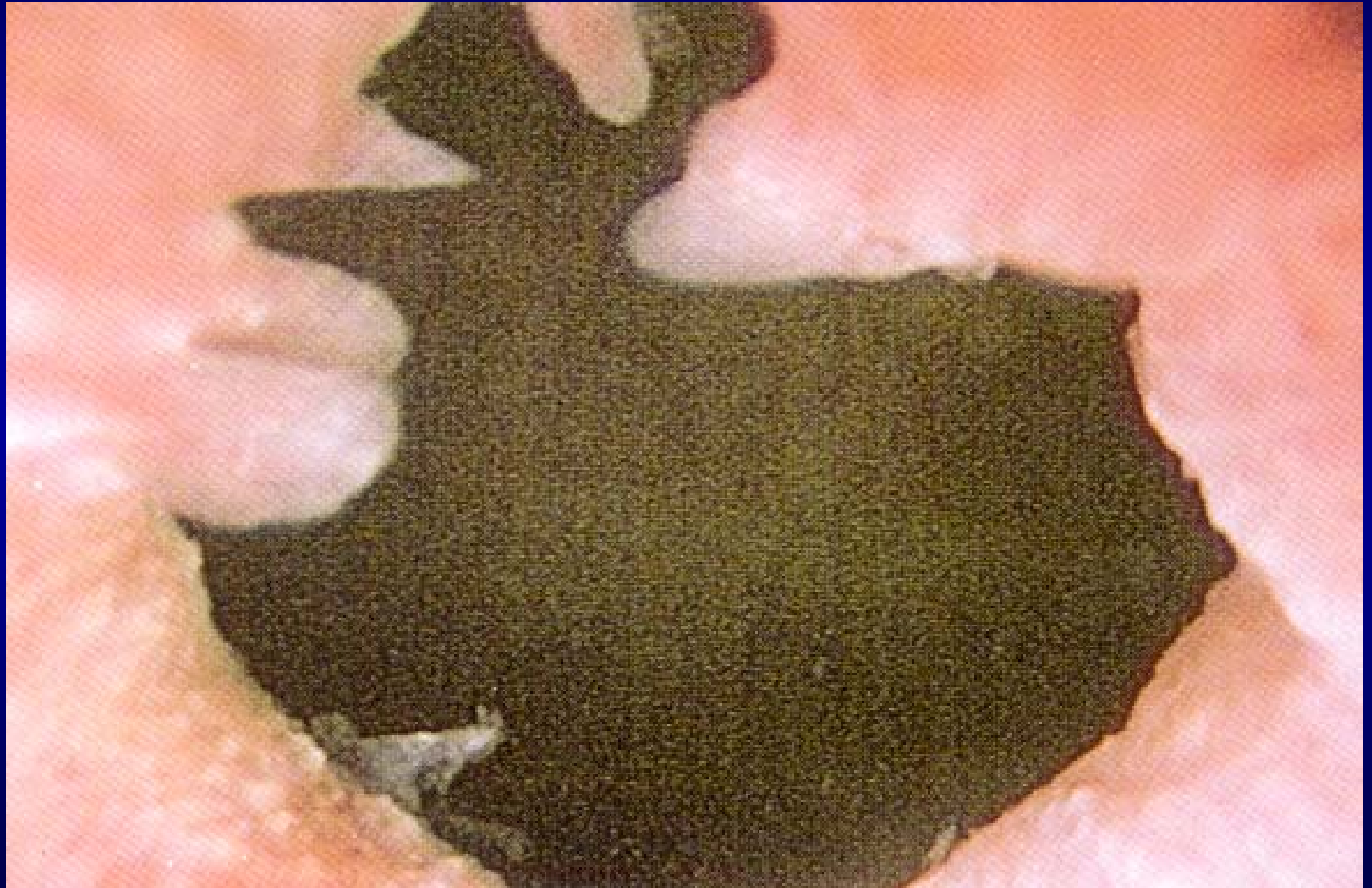




# Squamous Metaplasia



# Intraurethral Fronds at UVJ



ABNORMAL

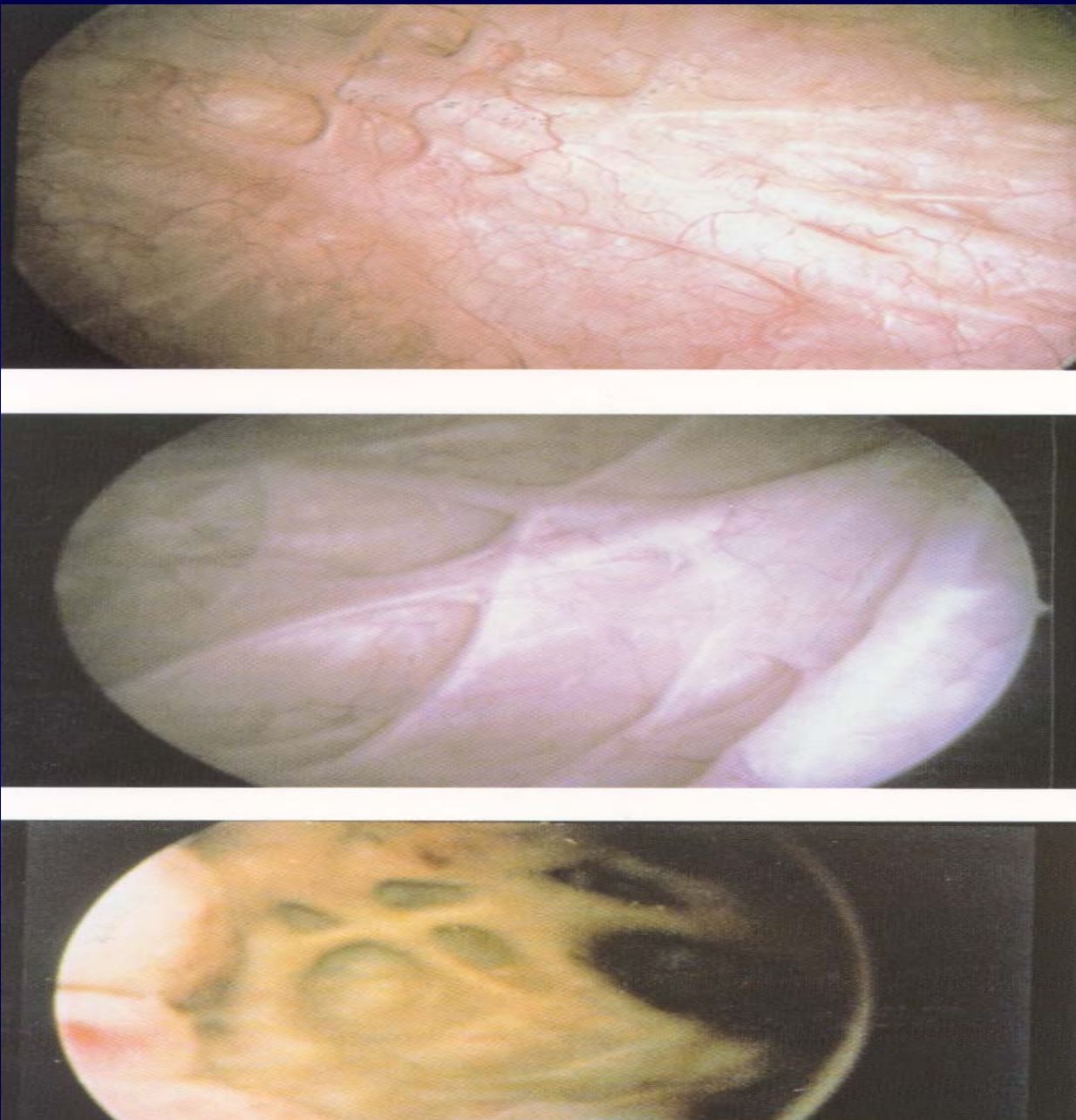




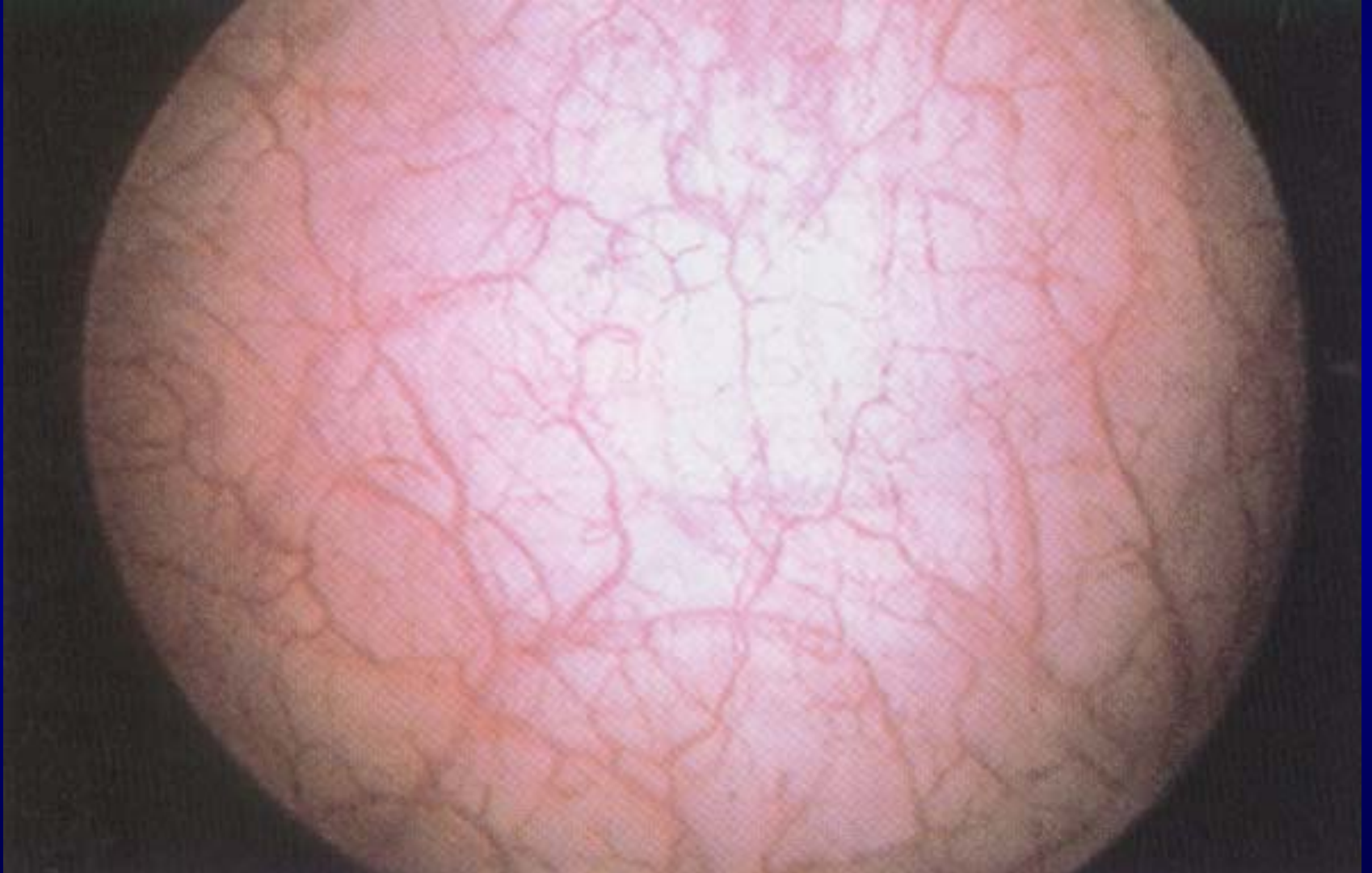
# Cystoscopic Bladder Trauma



# WZ01-A-COMBAT



# Hypervascular





# Normal Bladder Vasculature





# Intravesicular Endometriosis



# Cystitis Cystica



# Flat Transitional Cell CA



# Papillary Transitional Cell CA



# Suture in the Bladder



# Intraoperative Cystoscopy

## Potential Complications

- **Blood in Urine**
- **Red Marks in Bladder - trauma**

# Potential Complications

- **Infection –**

- prophylactic antibiotics for surgery probably cover

- **Overdistension**

- Normal cystometric bladder capacity 350-500cc
- Not a problem as long as one pays attention
- Use a one liter bag of sterile water/saline
- Keep the bag less than 60 cm above the patient



# Potential Complications

- **Suture in Bladder**
  - Remove the sutures sequentially
  - Keep the tails long
- **Is the Ureter Patent Preop?**
- **Is the Kidney Present?**
  - Congenital unilateral agenesis estimated to be 1/1200 livebirths

# Potential Complications

## No Efflux of Indigo Carmine

- **Wait up to 20 minutes**
- **Consider Lasix or fluid bolus chaser**
- **Remove Packs and/or Retractor**

# Potential Complications

## No Efflux of Indigo Carmine

- **Pass Ureteral Stent –**
  - impression of location of injury
- **Remove Uterosacral Stitches First then Paravaginal, then Burch**
- **Call for help**

# Questions and Comments

