Pearls for Ophthalmic Instrument Processing

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Financial Disclosure

- Julie Burlew has no Financial Disclosures.

Disclosure Statement
Unlabeled Usage Disclosure Statement

- Julie Burlew has disclosed that she will not be discussing unlabeled use of commercial products and/or investigational use of commercial products that are not yet approved by the U.S. Food and Drug Administration (FDA) for any purpose.
Learning Objectives

- List at least three general principles that are essential in the care, cleaning, and sterilization of ophthalmic surgical instruments.

- Discuss new regulatory guidelines in regard to reprocessing ophthalmic surgical instruments.

What do PEARLS have to do with Ophthalmic Instruments?

- Birth of a pearl is a miraculous event.

- A natural pearl begins as a foreign object.

- The oyster secretes a substance to protect the pearl.

What are Pearls of Wisdom?

- Biggest connection between a pearl and wisdom is that they both take a long time to develop. Also both a pearl and wisdom seem like small objects but they are both very valuable, and they develop from grit – something irritating, unwanted and unremarkable.
Ophthalmic Instrument Care is NOT Miraculous

- Attention to instrument care was really brought to forefront after large outbreak of TASS.
- We now know that poor processes in instrument care can lead to poor surgical outcomes.
- Knowledge of proper instrument care is critical for all team members.

ASCRS / ASORN Special Report / TASS

- FINDINGS – Improper care and handling of ophthalmic microsurgical instruments has been proven to lead to Toxic anterior segment syndrome (TASS).
- Goal of recommended practices is to prevent single facility outbreaks of TASS related to contaminated instruments.

Etiologies of TASS

- Extraocular substances inadvertently enter AC during or after surgery.
  - Topical anti-septic agents, talc from gloves, topical ointments
- Products that are introduced into AC as a part of the surgical procedure.
  - Anesthetic agents, preservatives, inappropriate reconstitution of medications
- Irritants on the surfaces of surgical instruments.
  - OVD’s, detergents, ultrasonic cleaning solutions
ASORN’s Resource

- Care and Handling of Ophthalmic Microsurgical Instruments Text
- 3rd edition / Revised 2011
- Order at ASORN.org

Instrument Care IS part of Every Surgical Case

Good outcomes depend on attention to instrument care essentials.

Advanced Technology and Instrumentation
Protect your Investment &
Your Patients

- The highest cost in the OR is surgical instrumentation.
- Microsurgical means delicacy and fragility.
- Properly maintained instruments will increase instrument life, reduce costs and improve patient outcomes.

Pearl # 1
Purchase for Quality

- Stainless Steel
- Titanium
- Gem Blades
- Finishes
- Single Use Instruments
- Always Follow Manufactures Guidelines

Stainless Steel

- NOT stain free
- NOT stain proof
- MEANS “stains less”
- Austentic (Series 300)
  - Non-magnetic, not heat treated, low carbon
    - Used for lid speculums, retractors, non cutting tools
- Martensitic (Series 400)
  - Magnetic, heat treated, contains carbon
    - Used for scissors, trephines
Titanium
- Harder and stronger than stainless steel
- Lighter weight than stainless steel
- Can be made harder and stronger
- Rust proof
- Corrosion proof
- Absorbs light, decreases glare from scope
- Generally costs more

Choose your Instrument Finish
- Manufacturer process includes a surface finish
- Finishes enhance corrosion resistance
- Finishes interfere with surface integrity
  - Polished Finish
  - Bright Finish
  - Smooth Finish
  - Sandblasted Finish

Pearl # 2
Smart Size Standard Trays
- Aim to limit the number of instruments in standard trays.
- Gain consensus from surgeons on standard trays.
- Purchase quality storage trays and minimize handling.
Select a Safe and Efficient Storage Tray

- Consider how many instruments you NEED in your tray.
- Do not overload your tray.
- Protect the tips.
- Be sure tips are in OPEN position to ensure proper sterilization.
- Maintain a count list and place in tray with consistency.

Pearl # 3
Organize Extras

- Use standard trays for ALWAYS use instruments.
- Organize back up in peel packs.
- Have them INSIDE the ophthalmic OR.
- Minimize use / adds to life of instruments.

Pearl # 4
Protect Gem Blades

- Diamonds are generally the most costly
- Can decrease the use of single use blades
- Easily damaged
- Require high maintenance
- Store separately
Pearl # 5
Single Use Means 1 Time

• DO not REUSE single use items.
• New Phaco tip for each pt.
• Eliminate reusable cannulas.

Single Use Instrumentation Verses Sterilization

• Single Use Instruments are a viable alternative to sterilization.
• Recent advances in technology allow surgeons to complete cases faster than we can properly reprocess instruments.
• Single use instruments should be an alternative as a back up should you need an instrument quickly.

Pearl # 6
Know the Danger Elements

• Blood / Tissue
• Saline
  • Salt crystals will damage instruments
• Sterile Water
  • Water damages corneal endothelium
• Lint Fibers
• OVD’s
• Enzymatic detergents
  • Can be toxic to cornea
Environmental Agents

- Use with caution around open eye instruments.
- CaviWipes / need to stay on surface for 2 minutes to allow for drying.
- Spay CaviCide has the potential to be airborne.
- Do not use sprays around open instrument sets.

Pharmaceutical Agents

- Ophthalmic OR’s should be virtually PRESERVATIVE FREE environments.
- Preservatives in medications used intraocular can be toxic to the cornea.

Pearl # 7
Cleaning Begins in OR

- Manual Cleaning is an ONGOING process intraoperatively.
- Remove the danger elements –
  - Blood / tissue
  - Saline / Water
  - OVD’s
- Use lint free instrument wipes.
Label all solutions

- Clearly label sterile water and BSS on your back table.
- Use different containers to avoid confusion.
- Remember your danger elements.
- Keep subconjunctival injections on back table until end of case.

Pearl #8
Keep used instruments moist

- After use, place soiled instruments in sterile water.
- Dried OVD can happen very quickly.
- Place delicate tips in tip protectors.
- If item is returned to sterile field / irrigate with BSS.

Pearl #7
Cover for transport

- Joint Commission now requires that instruments must be covered when transporting to decontamination area.
- Count your instruments prior to leaving the OR.
Pearl # 8
3 Steps to Reprocessing

- Manual Cleaning
- Decontamination
- Sterilization

3 Critical Steps of Reprocessing - JCAHO

- Cleaning and Decontamination
  - Remove all visible soil.
  - Follow manufacturer guidelines
  - Many require enzymatic soak.
- Sterilization
  - Steam sterilization must meet all parameters.
  - Must follow manufacturer guidelines.
- Storage or return to the sterile field
  - Carefully protected to prevent re-contamination.

Decontamination
Enzymatic Cleaning ?

- Is the process of cleaning instruments that have bioburden.
- Decontamination is NOT sterilization.
- Use mild, neutral Ph detergent with soft bristle brush.
- Thoroughly rise with distilled water.
- Copious irrigation of cannulated instruments.
Copious Irrigation of all cannulated instruments

- Follow your manufacturer guidelines.
- Enzymatic & ultrasonic cleaning solutions, along with OVD's can have heat stable endotoxins which can be reintroduced into patients' eyes.
- Use sterile or distilled water for irrigation.

Ultrasonic Cleaning

- Ultrasonic cleaners change sonic energy into mechanical energy.
- Will remove up to 90% of debris.
- Should be used daily, preferably after each use.
- RINSE of solutions.
- CHANGE solutions frequently.

Ultrasonic Solutions

- Find one with neutral pH.
- Follow manufacturer’s guidelines.
- Some have detergent and lubrication components.
Pearl # 9
Terminal Sterilization Each Pt.

- Have sufficient number of trays that you can terminally sterilize every time.
- Each patient receives same processed instrument regardless of surgical order.

Sterilization

- Sterilization is the process to render instruments free of microorganisms, including spores.
- Sterilization does NOT eliminate cleaning or decontamination.
- ALL instruments must be thoroughly cleaned and decontaminated prior to sterilization.

Steam Sterilization

- Steam Sterilization is the most economical, efficient sterilization process available.
- Uses moist heat and saturated steam under pressure.
- Requires heat, steam, time, and pressure to destroy bacterial spores.
- Current controversy over “Flash Steam Sterilization”
“Flash Sterilization”
Avoid Confusion in Terms

- The term “flash sterilization” has caused confusion.
- **Flash sterilization** is the most common term used to describe steam sterilization that does not utilize a full cycle (also terminal cycle).
- Originally flash sterilization meant sterilizing unwrapped instruments using steam for 3 minutes at 270 degrees F.
- Now many improvements have been made to this process and new thoughts emerge.

Joint Task Force of Academy and ASCRS

- AAO and ASCRS has a sterilization Task Force and has met with JCAHO.
- This task force is providing information to the Joint Commission about the unique characteristics of ophthalmic surgeries and instrumentation and the rate of surgical site infections in ophthalmology. The goal of this task force is to arrive at a common understanding with the Joint Commission about the types and safety of sterilization practices used in ophthalmic surgery centers.

AAO & ASCRS
Additionally Recommends

- Avoid using the antiquated term “flash sterilization”.
- Clean and rinse ALL surgical instruments appropriately after each case, as per the manufacturer’s instructions.
- Follow the manufacturers’ instructions for instrument sterilization, both the sterilizer and the instrument manufacturer.
- Protect instruments from recontamination during the transport to the sterile field.
- Have a written policy in place for how you care for instruments.
Summary Position Statement ~ JCAHO

- The Joint Commission announced a refocusing of its survey efforts on all the critical processes involved in sterilization, not the selection of the sterilization cycle or method. If the process is considered completed and performed well, then the Joint Commission will consider it effective. Thus, the use of shorter term steam sterilization processes for unwrapped instruments will no longer be considered “ineffective” without considering all of the aspects of the sterilization process. Joint Commission surveyors will observe processes of the cleaning, sterilization, and transportation of instruments, and ask for manufacturers’ instructions.

  • June 15, 2009

Recommendations for Ophthalmic Surgery Centers

- Know JCAHO Position Statements on Steam Sterilization AND

- CDC Hospital Infection Control Practices for Disinfection and Sterilization for healthcare facilities.

Pearl # 10
Right Person / Right Job

- Joint Commission now states “All SPD staff members should be certified within two years of employment by either the Certification Board for Sterile Processing or the International Association of Health Care Central Service Material Management.”
Patient safety and surgical outcomes require a multidisciplinary team approach.

Every aspect of the surgical experience has the potential to lead to adverse outcomes.

Every patient must receive the same standard of care.

Attention to these details does affect patient outcomes.

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Pick Your Pearl to Safer Patient Care

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The EYE Team
Safe Care for EVERY Patient
Thank you for your attention

References

- www.asorn.org
- www.aao.org
- www.aorn.org
- www.ascrs.org

Enjoy Chicago!