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Is TASS on the Increase?
Toxic Anterior Segment Syndrome

- Acute inflammation of the anterior chamber of the eye following cataract surgery.
Causes of TASS

  (Viscoelastics plus detergent)

  (Abtox Plazlyte Sterilization)
Causes of TASS con’t


- **2005** – Kutty et al. Multi-state outbreak of TASS – 2005. J. Cataract Refract Surg 30: 585-590, 2008. Endotoxin in balanced salt solution, mfr. Cytosol, above acceptable limits of 0.5 EU/mL (median 0.908 EU/mL, range 0.515 – 2.234 EU/mL)
Recommendations

- TASS task force recommendations
  - For cleaning and sterilization of intraocular surgical equipment (12/23/06).
    - ASCRS
    - AAO
    - ASORN
    - AORN
    - APIC
    - CDC
    - FDA
TASS Force Data & Surgery Center Visits

Causes of TASS – at 54 clinical centers:

- Inadequate cleaning and flushing of handpieces and instruments (residual of OVD’s)
- Enzymatic cleaners and detergents
- Reusable small gauge cannulas
- Using preserved epinephrine
- Inadequate manual cleaning of instruments
- Re-use of single use surgical devices
TASS Force Data & Surgery Center Visits
Causes of TASS – at 54 clinical centers: con’t

- Reuse of single use surgical devices
- No immediate cleaning of OVD’s from instruments
- Reuse of tubing for flushing, latex bulbs for irrigation
- Poor instrument maintenance (rust, autoclave residue)
- Improper use of prep solns, detergents, cleaners (Physohex, hibiclensis, Ivory Snow, etc)
- Failure to follow DFU, use of non-approved enzymatics
- Use of post-op ointment in clear cornea cases
- Touching of IOL or patient contact areas with instruments with gloved hands
- Wrong concentration of detergent and enzymatic cleaners
- Lack of routine cleaning and use of ultrasonic cleaners
Viscoelastic + Detergent

Toxicity

(TASS)
Plugged I/A Tip

1 Sec

3 Sec

4 Sec

6 Sec

Courtesy of William G. Myers, MD, Skokie, IL
Cleaning of I/A Tips:

DFU states 120 cc per infusion and aspiration.

Infusion flushing time = ~3.5 min

Aspiration rinsing time = ~1.5 min
In Conclusion, Why does TECD and TASS Occur?

Reforming the Anterior Chamber After Cataract Surgery

Anterior Chamber Replacement Volume

AC = 250 μl
PC = 50 μl
Lens = 250 μl

\[
\frac{550 \mu l}{2 \mu l} = 4.5 \text{ hours}
\]

Fibrin
Corneal Edema
Hypopyon

Reusable Cannulas
In Conclusion

Data from questionnaires (77) and site visits (54) – TASS: Common Offenders

- Inadequate cleaning and flushing of ophthalmic instruments and handpieces
- Use of detergents
- Ultrasonic water baths
- Intraocular medications with preservatives

Findings validate the need to follow the recommendations detailed in the TASS Force recommended practices document