Unilateral Congenital Cataract Surgery: A Case Study

Historically, unilateral congenital cataracts have had the reputation of having grim visual prognoses. Despite advances in modern technology, children with unilateral congenital cataracts are often complicated cases, often times with disappointing visual outcomes.

I. Case History

- Patient demographics
  - 53 year old African American female
- Chief complaint
  - Blurred vision OS/concern for ocular wellness
- Ocular, medical history
  - Ocular
    - History of unilateral congenital cataract removal at 8 months old, OD
    - Received first pair of glasses at the age of 3 years
    - +LP/motion only, OD
  - Medical
    - +Asthma
    - +Sarcoidosis
    - +Burns covering 98% of her body x1984

II. Pertinent findings

- Clinical
  - Visual Acuity
    - OD: LP, hand motion in periphery of vision
    - OS: 20/25 BCVA
  - Pupils
    - OD: ectopic pupil; sluggish reaction to light, -APD
    - OS: RRL-APD
  - Cover Test (distance and near)
    - Intermittent right esotropia
- Ocular Physical Exam
  - Biomicroscopy
- Lids/Lashes: Cl OU
- Conj: +1 injection OU
- Cornea: cl, +spk (OS only)
- Iris
  - OD: Iris entrapment; superiorly displaced pupil
  - OS: Flat/intact
- A/C
  - OD: open
  - OS: 4x4
- Lens:
  - OD: leukocoria; dense, white fibroed remnant capsule with small clear zone superiorly
  - OS: +1-2 NS
- Vitreous:
  - OD: unable to view
  - OS: +syneresis
- IOP
  - OD: 28 mmHg
  - OS: 12 mmHg
- Fundus evaluation
  - Optic Nerve
    - OD: unable to view
    - OS: 0.35R, pink & distinct
  - Nerve Fiber Layer
    - OD: unable to view
    - OS: intact, no defects
  - Macula
    - OD: unable to view
    - OS: clear, (-)FLR
  - Periphery:
- OS: unable to view
- OD: flat/intact 360
  - B-Scan
    - OD:
      - Vitreous: quiet
      - Retina: flat/intact

### III. Complications, Management, Treatment

- Complications for the patient as a result of unilateral, congenital cataract surgery:
  - Light perception vision/essentially monocular
  - Extreme photophobia
  - Increased IOP
    - No pain; currently
  - Poor cosmesis

- Treatment
  - No recommended treatment option

- Management
  - Treat pain, if it occurs due to elevated IOP, OD
    - Pressure lowering drops
      - Timolol—not a safe option due patients lung complications
      - Endoscopic Cyclophotocoagulation (ECP)/ciliary body ablation
  - Protect OS with polycarbonate lenses

### IV. Discussion

- The major approaches to infantile cataract surgery, historically
  - Dicission
    - When popular:
      - early 1900’s, used as far back to Celsus and the beginning of the Christian era
    - Procedure:
      - Anterior lens capsule opened with a Wheeler or Ziegler knife under the assumption that the exposure of the lens contents to the aqueous would result in satisfactory absorption of the lens
- Major Complications:
  - Glaucoma, cortex retention, and occlusion of the pupil by a thick membrane, 40% incidence of retinal detachment

  o Linear extraction
    - When popular:
      - Early 1930s with its height of popularity in the 1950s
    - Procedure
      - Large incision through the cornea with a toothed-capsule forceps and lens substance was then ‘milked’ from the anterior chamber, the cornea sutured, and the anterior chamber reformed with a bubble
    - Major complications:
      - Vitreous loss, expulsive hemorrhage, and delayed anterior chamber formation with subsequent peripheral anterior synechiae resulting in secondary glaucoma, 7% incidence of retinal detachment

  o Aspiration
    - When popular
      - Started gaining popularity in the early 1960s
      - By the end of the 1970s became the most popular method used by ophthalmologists for surgical correction of congenital cataracts
    - Procedure
      - Multiple approaches; ideal aspiration method would utilize a cannula inserted through a small corneal incision through which most of the contents of the lens would be aspirated (a large piece of the anterior capsule having been removed previously)
    - Drawbacks
      - Cortex removal was often incomplete and the posterior capsule was left intact by most surgeons, secondary opacification of the visual axis occurred frequently and required multiple additional procedures

  o Lensectomy
    - When popular
      - Currently
    - Procedure
      - Most of the lens (including the posterior capsule) and anterior vitreous is removed with a vitrector
• Benefits
  • Provides a clear pupillary axis in the crucial first 18 months after surgery; when the child’s developing vision is most sensitive to the effects of a degraded visual input

• References

V. Conclusion

• Many advances have been made in field of infantile congenital cataract surgery over the years, but the process is still imperfect

• It is important to be mindful of any complications that may arise with infantile cataract surgery procedures. Although procedures are much improved than they were in the 1960s, it is possible to have a patient who underwent aspiration for congenital cataract removal as an infant. The patient presented above most likely underwent this procedure; therefore, a basic understanding of cataract excision and its complications are needed in order to provide the best patient care possible