Cataract Surgery

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Case - 1

- 70 year old lady
- Poor outcome after cataract surgery in one eye
- Poor vision in the other eye
Case - 1
Case - 1

• What are the possible causes of this problem?
  - Poor surgery
  - TASS
  - Other cause of endothelial cell loss
Case - 1

- What are the possible causes of this problem?
  - Poor surgery
  - TASS
  - Other cause of endothelial cell loss
  - Fuch’s endothelial dystrophy
Case - 1

- What are the possible causes of this problem?
- How will you manage the second eye?
Cataract Surgery
Endothelial Dystrophy
Pearl No. 1

Identify the disease
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Endothelial Dystrophy

Presents unique challenges
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Endothelial Dystrophy

Remember
• Signs appear before symptoms
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Endothelial Dystrophy

If not recognized

- Prolonged corneal edema
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Endothelial Dystrophy

If not recognized

- Prolonged corneal edema
- Irreversible corneal edema
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Endothelial Dystrophy

If not recognized

- Prolonged corneal edema
- Irreversible corneal edema
- Late progressive corneal edema
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Pearl No. 1

Perform thorough clinical evaluation including slit-lamp examination
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Pearl No. 2
Assess endothelial morphology and function
Assess Endothelium

- Cell density  (Cells/mm\(^2\))
- Cell size     (Pleomorphism)
- Morphology   (Polymegathism)
- Functions    (Pachymetry)
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Pearl No. 3

Classify the patient into severity grade
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Pearl No. 3

Grade 1

- No corneal edema
- Corneal thickness $\leq 580\mu$
- Endothelial cell count $\geq 1500$
Grade 2

- Morning blurring of vision
- No or mild corneal edema
- Corneal thickness 580 to 620 µ
- Endothelial cell count < 1500
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Pearl No. 3

Grade 3

- Clinical corneal edema
- Corneal thickness > 620 µ
- Endothelial cell count < 1000
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Pearl No. 4

Decide management based on

- Severity of endothelial dysfunction
- Cataract grade
Surgical options

- Cataract surgery alone
- Cataract surgery followed by corneal surgery if required
- Combined surgery
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Surgical Plan

Grade 1

• No corneal edema
• Corneal thickness $\leq 580\mu$
• Endothelial cell count $\geq 1500$
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Endothelial Dystrophy
Surgical Plan

Grade 2
- Morning blurring of vision
- No or mild corneal edema
- Corneal thickness 580 to 620 μ
- Endothelial cell count < 1500

Counsel the patient and offer both options
Cataract Surgery
Endothelial Dystrophy
Surgical Plan

Grade 3

- Clinical corneal edema
- Corneal thickness > 620 µ
- Endothelial cell count < 1000

Combined procedure
Once decided on cataract surgery alone some more planning and preparation is necessary.
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Normal density cataract

• Phacoemulsification is better
Hard cataract

- Combined procedure is advisable
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Endothelial Dystrophy
Pearl 5

Modify cataract surgical procedure to reduce endothelial cell loss
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Power modulation
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Intelligent use of OVDs
• Soft-shell technique
Do not panic if the patient develops postoperative corneal edema.
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Postoperative corneal edema

- Treat as any other cataract surgery patient
- No intervention for at least 3 months
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Pearl 8
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Endothelial Dystrophy

Summary

• Early diagnosis is crucial
• Choice of surgical procedure depends on the stage of the dystrophy
• Modify cataract surgery so as to reduce endothelial cell loss
• Preop counseling will help postoperative management
Thank you!

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