Multi-print Soft Prosthetic Contact Lenses for Ocular Cosmesis in Microcornea
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Abstract:
Patients with ocular conditions such as microcornea face social challenges due to their ocular cosmesis. The use of multi-print soft prosthetic lenses can provide an affordable option to improved cosmesis and quality of life.

I. Case History
• Patient demographics: 26 year old white female
• Chief complaint: Improved ocular cosmesis of the right eye
  ○ Patients is not completely satisfied with the overall look of her iris prosthetic implant. In particular, she is interested in options for making the right eye iris the same size as the left iris and improved alignment of her right eye.
• Ocular, medical history:
  ○ Microcornea OD
  ○ Esotropia OD
  ○ Amblyopia OD
  ○ History of a prosthetic iris implant in the right eye
• Medications: Birth control, Multi vitamin

II. Pertinent findings
• Clinical: BCVA OD: 20/400 OS: 20/20
• Manifest refraction:
  ○ OD: -6.50-2.25x175
  ○ OS: -2.00-1.75 x 023
• Pupils:
  ○ OD: Fixed: prosthetic iris: 3.7mm
  ○ OS: Round and reactive to light: 4mm in normal room illumination
• Moilities:
  ○ OD and OS: Full range of motion
• Cover Test:
~35 pd right constant esotropia

- Confrontation visual fields:
  - OD and OS: Full to finger counting

- Slit Lamp examination:
  - OD:
    - Lids/Lashes: Normal
    - Sclera: 1 suture present just outside the limbus at 10 o'clock
    - Conjunctiva: normal
    - Cornea: Microcornea: Neovascularization about 0.5 mm radially from the limbus 360 degrees with sporadic ghost vessels present
    - Iris: Prosthetic implant with an iridectomy at 2 o'clock: 9.5 mm diameter with a 3.7 mm pupil
    - Anterior Chamber: Deep and quiet
  - OS:
    - Lids/Lashes: Normal
    - Sclera: Normal
    - Conjunctiva: normal
    - Cornea: Clear
    - Iris: 11.75 mm horizontal visible diameter: Pupil size of 4 mm in normal room illumination
    - Anterior Chamber: Deep and quiet

III. Differential diagnosis

- Primary/leading:
  - Microcornea OD
  - Esotropia OD
  - Amblyopia OD
  - Prosthetic iris implant OD

IV. Diagnosis and discussion

- Microcornea is a feature that can be found in isolation or can be linked to many different entities. Although it is a stable feature that usually does not present any progressive damage to the ocular structures, it can have a detrimental impact on the quality of life of a patient due to the cosmetic appearance.
Even with a prosthetic iris implant, patients may desire an option that equalizes the horizontal visible iris diameter between the two eyes. In this case, prosthetic contact lenses with a printed iris may provide a beneficial solution in improving ocular cosmesis and patient satisfaction.

V. Treatment, management

- In office, multiple trials were “piggy backed” to find the correct color choice that would best match the patient’s natural eye color in the left eye.
- The colors chosen, along with the order they were applied, were then sent to the laboratory for a custom colored soft contact lens that would match the size and color of the iris on the left eye.
- The patient was referred to an ophthalmologist for evaluation concerning a potential eye alignment procedure to reduce the right esotropia.

References:

  - Ocular alignment surgery in adult strabismic patients improved social anxiety levels
  - Prosthetic contact lenses improve social relationships and patient well being in patients with opaque corneas

VI. Conclusion

- Keep it simple: Multicolor printed prosthetic soft contact lenses can be a cheaper option for patients looking for an improvement in cosmesis while avoiding the expense and inconvenience of a hand painted lens. In addition, they can provide a better match than standard “out of the box” colored contacts with more options regarding pupil size and light control.
- Cosmesis is important: When managing patients, improving cosmesis of ocular conditions can play a major role in self confidence, societal acceptance and the overall well being of the patient.