Medical Policy

Optical Coherence Tomography of the Anterior Eye Segment

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Policy Number: 084
BCBSA Reference Number: 9.03.18
NCD/LCD: Local Coverage Determination (LCD): Scanning Computerized Ophthalmic Diagnostic Imaging (SCODI) (L34380)

Related Policies
- Computer-Assisted Corneal Topography, #301
- Ophthalmologic Techniques That Evaluate the Posterior Segment for Glaucoma, #053
- Endothelial Keratoplasty, #180
- Aqueous Shunts and Stents for Glaucoma, #223

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

Scanning computerized ophthalmic (eg, OCT) imaging of the anterior eye segment is INVESTIGATIONAL.

Medicare HMO BlueSM and Medicare PPO BlueSM Members

Medical necessity criteria and coding guidance for Medicare Advantage members living in Massachusetts can be found through the link below.

Local Coverage Determination (LCD): Scanning Computerized Ophthalmic Diagnostic Imaging (SCODI) (L34380)

For medical necessity criteria and coding guidance for Medicare Advantage members living outside of Massachusetts, please see the Centers for Medicare and Medicaid Services website for information regarding your specific jurisdiction at https://www.cms.gov.

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products. See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.  
No indicates that prior authorization is not required.  
N/A indicates that this service is primarily performed in an inpatient setting.

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Coverage Status</th>
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<tbody>
<tr>
<td>Commercial Managed Care (HMO and POS)</td>
<td>This is not a covered service.</td>
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<tr>
<td>Commercial PPO and Indemnity</td>
<td>This is not a covered service.</td>
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<tr>
<td>Medicare HMO Blue℠</td>
<td>No</td>
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<tr>
<td>Medicare PPO Blue℠</td>
<td>No</td>
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**CPT Codes / HCPCS Codes / ICD Codes**

*Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.*

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

*The following codes are included below for informational purposes only; this is not an all-inclusive list.*

**The following CPT code is considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:**

<table>
<thead>
<tr>
<th>CPT Codes</th>
<th>Code Description</th>
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<tr>
<td>92132</td>
<td>Scanning computerized ophthalmic diagnostic imaging, anterior segment, with interpretation and report, unilateral or bilateral</td>
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**Description**

OCT is a high-resolution method of imaging the ocular structures. OCT for the anterior eye segment is being evaluated as a noninvasive diagnostic and screening tool for the detection of angle closure glaucoma, to assess corneal thickness and opacity, evaluate presurgical and postsurgical AC anatomy, calculate intraocular lens power, guide surgery, assess complications following surgical procedures, and to image intracorneal ring segments. It is also being studied in relation to pathologic processes such as dry eye syndrome, tumors, uveitis, and infections.

OCT is a noninvasive method that creates an image of light reflected from the ocular structures. In this technique, a reflected light beam interacts with a reference light beam. The coherent (positive) interference between the 2 beams (reflected and reference) is measured by an interferometer, allowing construction of an image of the ocular structures. This method allows cross-sectional imaging at a resolution of 6 to 25 μm. The Stratus OCT™ (Carl Zeiss Meditec), which uses a 0.8-μm wavelength light source, was designed for evaluating the optic nerve head, retinal nerve fiber layer, and retinal thickness (see #053, Ophthalmologic Techniques for Evaluating Glaucoma). The Zeiss Visante OCT™ and AC Cornea OCT (Ophthalmic Technologies) use a 1.3-μm wavelength light source designed specifically for imaging the anterior eye segment. Light of this wavelength penetrates the sclera, allowing high-resolution cross-sectional imaging of the AC angle and ciliary body. The light is, however, typically blocked by pigment, preventing exploration behind the iris. Ultrahigh resolution OCT can achieve a spatial resolution of 1.3 μm, allowing imaging and measurement of corneal layers.

An early application of OCT technology was the evaluation of the cornea before and after refractive surgery. Because this is a noninvasive procedure that can be conducted by a technician, it has been proposed that this device may provide a rapid diagnostic and screening tool for the detection of angle closure glaucoma. The classification of glaucoma (primary open angle or angle closure) relies heavily on knowledge of the AS anatomy, particularly that of the AC angle. Angle closure glaucoma is characterized...
by obstruction of aqueous fluid drainage through the trabecular meshwork (the primary fluid egress site) from the eye’s AC. The width of the angle is one factor affecting the drainage of aqueous humor. A wide unobstructed iridocorneal angle allows sufficient drainage of aqueous humor, whereas a narrow angle may impede the drainage system and leave the patient susceptible to angle closure glaucoma. The treatment for this condition is a peripheral iridotomy (laser) or peripheral iridectomy (surgery).

Slit lamp biomicroscopy is typically used to evaluate the AC; however, the chamber angle can only be examined with specialized lenses, the most common of these being the gonioscopic mirror. In this procedure, a gonio lens is applied to the surface of the cornea, which may result in distortion of the globe. Ultrasonography may also be used for imaging the anterior eye segment. Ultrasonography uses highfrequency mechanical pulses (10-20 MHz) to build up a picture of the front of the eye. An ultrasound (US) scan along the optical axis assesses corneal thickness, AC depth, lens thickness, and axial length. US scanning across the eye creates a 2-dimensional image of the ocular structures. It has a resolution of 100 µm but only moderately high intraobserver and low interobserver reproducibility. US biomicroscopy (≈ 50 MHz) has a resolution of 30 to 50 µm. As with gonioscopy, this technique requires placement of a probe under topical anesthesia.

Summary
Optical coherence tomography (OCT) is a high-resolution method of imaging the ocular structures. OCT for the anterior eye segment is being evaluated as a noninvasive diagnostic and screening tool for the detection of angle closure glaucoma, to assess corneal thickness and opacity, evaluate presurgical and postsurgical anterior chamber (AC) anatomy, calculate intraocular lens power, guide surgery, assess complications following surgical procedures, and to image intracorneal ring segments. It is also being studied in relation to pathologic processes such as dry eye syndrome, tumors, uveitis, and infections.

Ideally, a diagnostic test would be evaluated based on its technical performance, diagnostic accuracy (sensitivity, specificity, predictive value), and effect on health outcomes. Current literature consists primarily of assessments of qualitative and quantitative imaging and detection capabilities. Technically, anterior segment optical (AS) coherence tomography (OCT) has the ability to create high-resolution images of the AS. In addition, studies indicate that the AS OCT detects more eyes with narrow or closed angles than gonioscopy, suggesting that the sensitivity of OCT is higher than that of gonioscopy. However, because of the lack of a true criterion standard, it is not clear to what degree these additional cases are true positives versus false positives, and therefore the specificity and predictive values cannot be determined. Evaluation of the diagnostic performance depends, therefore, on evidence that the additional eyes identified with narrow angle by OCT are more likely to progress to primary angle closure glaucoma. OCT imaging may be less sensitive in comparison with ultrasound biomicroscopy for other pathologic conditions of the AS, such as cataracts, anterior tumors, iris, ciliary bodies, haptics, and posterior chamber intraocular lenses.

Evaluation of the clinical utility of AS OCT depends on demonstration of an improvement in clinical outcomes. For example, outcomes will be improved if OCT detects additional cases of primary angle closure glaucoma, which represent true cases of glaucoma and not false positives, and if these cases are successfully treated for glaucoma. It is not currently possible to determine the frequency of false-positive results with OCT; therefore it cannot be determined whether health outcomes are improved. For other potential indications (eg, to aid in diagnosis of AS pathology or guide surgical procedures), evidence is currently limited.

Because the impact on health outcomes of AS OCT for angle closure glaucoma, as well as for other disorders of the anterior chamber, is not known, this procedure is considered investigational.

Policy History

<table>
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<tr>
<th>Date</th>
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<tbody>
<tr>
<td>6/2017</td>
<td>Clarified coding language.</td>
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<tr>
<td>10/2016</td>
<td>New references added from BCBSA National medical policy.</td>
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Information Pertaining to All Blue Cross Blue Shield Medical Policies
Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References
7. Mansouri K, Sommerhalder J, Shaarawy T. Prospective comparison of ultrasound biomicroscopy and anterior segment optical coherence tomography for evaluation of anterior chamber dimensions in European eyes with primary angle closure. Eye (Lond). Feb 2010;24(2):233-239. PMID 19444291