segment superiorly may increase distortions and result in loss of BSCVA.

As observed using OCT, we suggest here that the effect of Intacs in keratoconus is not on the cone’s apex but rather a more limited local flattening effect on the cornea surface above the segment. Because Intacs do not stretch the cone itself, it would explain why 1 inferior segment is better than 2 segments and why tighter channels should not make a difference. The local effect also explains why inserting a thicker superior segment is not as good as inserting a thicker inferior one near the steepest area of the cornea.

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Pulmonary Metastasis Masquerading as Anterior Uveitis

uveal metastasis is the most common intraocular malignancy, but iris involvement accounts for only 5% to 10% of cases. Most iris metastases are carcinomas, with breast, lung, and gastrointestinal tract carcinomas representing the majority of primary tumors. Renal cell carcinoma is also reported to result in metastasis to the iris. There is no history of a previously diagnosed primary tumor in 32% of cases. We report a case in which an iris lesion led to the detection of lung cancer.

Report of a Case. A 65-year-old white woman noted pain in her left eye, was diagnosed with anterior uveitis, and was treated with topical steroid drops. Two weeks later an iris mass was noted. The mass enlarged during a 2-week
Biopsy of the mass revealed a poorly differentiated small-cell neoplasm with mitotic activity (Figure 2A). Immunohistochemistry showed strong AE1/AE3 (pan-cytokeratin) immunoreactivity consistent with epithelial origin (eFigure 1 [available at http://www.archophthalmol.com]). Immunolabeling results with HMB-45, S-100, Mel A, neuron-specific enolase, CD45, CD20, and CD3 were negative.

A computed tomographic scan of the chest and abdomen revealed multiple pulmonary nodules and a left perihilar soft tissue mass suspicious for malignancy. There were bilateral adrenal masses and multiple soft tissue masses within the mesentery suspicious for metastatic lesions. Complete blood cell count and liver function test results were normal.

Two weeks later the patient developed jaundice. Follow-up computed tomography demonstrated a new mass in the head of the pancreas. Endobronchial biopsy of the left lower lobe mass revealed an undifferentiated small-cell carcinoma (eFigure 2). The patient declined chemotherapy and was lost to follow-up.

Comment. Metastases to the iris may appear as nodules, iridocyclitis, rubeosis iridis, iris atrophy, hypopyon, hyphema, or secondary glaucoma. Metastatic lesions characteristically appear as grayish white, yellow, orange, or brown, gelatinous, vascularized nodules on the surface of the iris.

This case is unusual in that the initial presentation was uveitis with pseudokeratic precipitates, presumably secondary to tumor shedding. Also, the tumor was within the iris rather than on it. There was no known history of cancer, and chest radiography was read as unremarkable. Diagnosis was made only after biopsy of the iris tumor, which suggested a pulmonary malignancy, and pulmonary lesions were seen on subsequent computed tomography. Retrospective re-review of the chest radiograph revealed no lung nodules; however, fullness of the left hilum was noted. Had this been appreciated earlier, a computed tomographic scan of the chest might have revealed cancer prior to the iris biopsy.

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Synergistic Convergence in Congenital Extraocular Muscle Misinnervation

Synergistic divergence is a well-established clinical condition in which abduction arises on attempted adduction, leading to simultaneous abduction of both eyes on lateral gaze. Synergistic divergence can occur as an extreme form of Duane syndrome, where most if not all oculomotor nerve branch fibers originally directed to the medial rectus muscle innervate the lateral rectus muscle. Synergistic convergence is an extremely rare form of ocular motor synkinesis characterized by simultaneous adduction on lateral gaze. It has only been described once in a case of congenital fibrosis of the extraocular muscles. Here we describe a girl with isolated congenital synergistic convergence and discuss its probable pathophysiology.

Report of a Case. A 5-year-old girl had orthophoria and reduced stereovision in primary position. On right gaze, she fixated with the left eye in adduction, and a large esotropia of about 52 prism diopters (Δ) appeared. On left gaze, she fixated with the right eye and, very similarly, a large convergent angle of greater than 50Δ appeared (Figure 1). Thus, the right and left gazes evoked a similar convergent misalignment of the eyes. However, on changing the gaze direction, we observed a marked modification of the eyelid fissure. Due to globe retraction of the nonfixating eye, the right eyelid fissure narrowed during right gaze, whereas the left eyelid fissure narrowed on left gaze (eFigure 1 [available at http://www.archophthalmol.com]). No ptosis was apparent on primary gaze. Upgaze and downgaze were normal.

There was no change in pupil diameter with change of gaze. Convergence could be elicited up to 6 cm with no difference in the eyelid fissures. Magnetic resonance imaging examination was carried out at a 3-T magnetic resonance scanner (Trio Tim Siemens, Erlangen, Germany). The examination protocol requested axial and sagittal T2-weighted images with 5- and 6-mm slice thickness, axial T1-weighted images of the orbit with 2 mm, coronal and sagittal T2-fat-suppressed slices with 2 mm, coronal T1-fat-suppressed slices with 3 mm, and a T2-weighted 3-dimensional Constructive Interference in Steady State sequence with 0.5-mm slice thickness enabling secondary reconstructions along the cranial nerves. The oculomotor nerves showed a slight difference in thickness (1.80 mm for the right and 1.50 mm for the left) (Figure 2A), with the left one being slightly thinner than the mean (SD) of 2.01 (0.36) mm in healthy subjects. Abducens nerves (eFigure 2A) had a normal configuration at the subarachnoid space course. The orbits and the nucleus regions of the brainstem revealed no abnormality. Extraocular muscles were normal in size, showing no fibrotic changes (Figure 2B). There was no family history of ocular misalignment, ophthalmoplegia, or abnormal eye movements.

Comment. Synergistic convergence has been described only once in a patient who had congenital fibrosis syndrome and whose eye motility was limited in all directions in both eyes. Magnetic resonance imaging in this patient disclosed absence of the abducens nerves as well as hypoplasia of the oculomotor nerves with atrophy of the superior and medial rectus muscles of both eyes. Pronounced globe retraction depending on gaze direction was not present. By contrast, our patient had no ptosis, no extraocular muscle hypoplasia, and no family history to suggest the diagnosis of congenital fibrosis syndrome. Therefore, our patient’s pathomechanism of synergistic convergence is most likely different. Her congenital, isolated synergistic convergence with globe retraction suggests aberrant nerve sprouting during embryogenesis as the underlying cause. It might be due to a pattern of aberrant innervation similar to that in Duane syndrome, which leads to synergistic divergence (type IV). However, instead of aberrant oculomotor nerve fibers, here we suspect a miswiring of abducens motor neurons to the medial rectus muscle. If most of the abducens nerve fibers were misdirected to the medial rectus muscle, intended abduction would lead to adduction of the eye, and the co-contraction of the lateral and medial rectus muscles would result in globe retraction and eyelid fissure narrowing (Figure 3). In contrast to Duane syndrome, in which there is evidence of primary abducens nerve hypoplasia that predisposes to the miswiring, our patient showed no clinical or neuroimaging signs of oculomotor nerve hypoplasia (Figure 2A and B). Contraction of the medial rectus muscles during convergence was normal; thus, we observed no obvious explanation of aberrant nerve sprouting. An unusual congenital sixth-nerve palsy similar to congenital third-nerve palsies should also be considered a cause of miswiring. Congenital third-nerve palsies often occur with anomalous reinnervation and no other neurologic or systemic ab-

Figure 1. In primary gaze, the eyes are mostly parallel and no difference in eyelid fissure is visible. In right and left gaze, a tremendous esotropia becomes obvious. Depending on the gaze direction, one observes a retraction and narrowing of the eyelid fissure of the nonfixating eye.