

SECTION IIH. SUPERIOR OBLIQUE PALSY

INTRODUCTION

DISEASE DEFINITION

Superior oblique palsy is due to partial or complete paralysis of the 4th cranial nerve (trochlear nerve), resulting in weakness of the superior oblique muscle. The motility disturbance creates a combination of vertical, torsional, and, to a lesser degree, a horizontal incomitant strabismus pattern. Both congenital and acquired forms exist, with the presumed congenital type often presenting for the first time in adulthood.²⁸⁴

Patients will show hypertropia of the involved eye, often accompanied by a compensatory head tilt away from the affected eye. Complaints include diplopia, asthenopia, and/or anomalous head posture. Patients with decompensated congenital SOP may have facial asymmetry, demonstrating a shorter maxilla on the opposite the side of the SOP (and thus reduced distance between the corner of the mouth and lateral canthus).²⁸⁵ It is becoming increasingly recognized that not all chronic vertical deviations, consistent with the pattern of a SOP, have decreased size of the superior oblique muscle belly on neuroimaging and sometimes only compartmental atrophy is present. These vertical deviations might best be referred to as presumed SOP²⁸⁴ or masquerading SOP.²⁸⁶ There are also non-inflammatory post-inflammatory presentations of TED where the predominant pathology is unilateral or bilaterally asymmetric inferior rectus enlargement and present with a three-step test mimicking SOP.¹⁴⁰ Nevertheless, the treatment approach is often the same as when addressing confirmed SOP, customizing the treatment plan to address the vertical, torsional, and possibly horizontal components of the deviation.

Head trauma (including concussion) is one of the most common identifiable causes of both unilateral and bilateral acquired SOP, although in extremely rare cases isolated trochlear schwannomas and giant cell arteritis can result in acquired SOP.^{287-289, 284}

Skew deviation has a motility pattern that can resemble the misalignment seen with SOP. Distinguishing characteristics, particularly related to fundus torsion, symptoms of ocular tilt and, at times, the impact of upright versus supine positioning of the patient are described at length in Section III. Skew Deviation.²⁹⁰ Distinction is important because skew deviation is more frequently associated with less benign etiology and more often warrants neuroimaging.

PATIENT POPULATION

The patient population includes adults with strabismus associated with congenital or acquired SOP.

CLINICAL OBJECTIVES

- Determine if SOP is congenital or acquired, unilateral or bilateral, or whether it might be a masquerading SOP.²⁸⁶
- Counsel the patient on the diagnosis and treatment options.
- Provide goal-directed management of strabismus (reconstructive to enhance binocular vision and reduce diplopia or a compensatory head posture). This includes addressing the individual barriers to fusion and comfortable binocular single vision, including incomitance of the vertical deviation, to assess whether torsion is a barrier to fusion and, if so, addressing that torsion and incomitance of any horizontal deviation.
- Inform the patient's other health care providers of the diagnosis and treatment plan.