

LAMINA CRIBROSA AND ITS SURROUNDINGS

Dra Gema Rebolleda, MD

Universidad de Alcalá and Ramón y Cajal University Hospital, Madrid

For years, the lamina cribrosa (LC) has been considered the primary site of axonal damage in glaucoma. Histological studies have demonstrated that a high intraocular pressure (IOP) can produce morphological changes including compression, and displacement of the LC, impairing the support to the ganglion cell axons. Newer optical coherence tomography devices, including swept-source and enhanced depth imaging have allowed us to evaluate with detail the LC in vivo, providing qualitative and quantitative information about general and localized morphological features, such as the laminar and prelaminar thickness, focal defects or pits, lamina cribrosa position and peripheral LC insertion. LC is a dynamic structure and several factors that can influence its morphological configuration over time, including age, race, glaucoma damage, and IOP. It is well known that LC forms a barrier between the intraocular space and the orbital subarachnoid space creating a translaminar pressure gradient, so that LC position can be modified not just by changes in IOP but cerebrospinal fluid pressure. High-penetration OCT has improved the evaluation of the choroid and sclera providing automatic segmentation, thereby it has become a valuable tool to establish the relationship between laminar focal defects and other morphological changes in the sclera and peripapillary choroid.