OPTIC PERINEURITIS (PERIOPTIC NEURITIS)

Perioptic neuritis is a condition in which only the periphery of the optic nerve is inflamed. Edmunds and Lawford (627) initially described optic perineuritis as occurring in two forms: exudative and purulent. The exudative form, representing a localized, nonsuppurative pachymeningitis, occurs infrequently, most often in association with syphilis, sarcoidosis, and viral encephalitides (628–632). The purulent form, actually a leptomeningitis, arises as an extension from the cerebral meninges. Pathologically, the pia and arachnoid are infiltrated by polymorphonuclear leukocytes that are also found free in the subarachnoid space surrounding the optic nerve (Fig. 6.22). From the leptomeninges, the

![Figure 6.22](image_url)
infiltration may spread into the substance of the optic nerves
without at first affecting the nerve fibers themselves.

Purvin et al. (633) reviewed the medical records of 14
patients with optic perineuritis who were seen in two neuro-
ophthalmology clinics. The patients ranged in age from 24
to 60 years; 5 were older than 50 years. All patients had
visual loss, eye pain, or both. The visual acuity was 20/20
or better in 8 of the 15 eyes. The results of visual field testing
were normal in two eyes, and a paracentral scotoma or an
arcuate defect was seen in seven. MR imaging demonstrated
circumferential enhancement around the optic nerve, some-
times with intraorbital extension. Response to corticoste-
roids was dramatic; however, four patients had a relapse
with lowering of the dose. The authors concluded that in
contrast to those with optic neuritis, patients with optic peri-
neuritis are often older at onset and are more likely to show
sparing of central vision. MR imaging demonstrates en-
hancement around, rather than within, the optic nerve. Re-
response to corticosteroids is more dramatic than in patients
with optic neuritis, and patients are more likely to experience
recurrence after stopping treatment.

In many cases of optic perineuritis, there are neither ocular
symptoms nor signs other than disc swelling, usually bilat-
eral. Apparently, the absence of visual dysfunction occurs
because the infiltration is loose and disorganized. When vit-
reous cells are present, the differentiation from papilledema
is easy; however, when there are no intraocular signs of
inflammation, it may be necessary to perform neuroimaging
and a lumbar puncture for diagnosis. Enlargement of the
optic nerve sheath on CT scan may simulate optic nerve
sheath meningioma (634), but advanced MR imaging is de-
finitive (633).

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