

This article cannot give an in-depth coverage of a specialised subject: the following is a brief outline.

(Mostly treatments not included as this is specialised).

In the 1999 survey, 45% of respondents said they had some sort of visual problems.

Further investigation revealed that common problems included:

- Photoaversion: intolerance of bright light: a very common problem, most often after myelograms or epidural injections; it may be due to hypersensitivity of the nervous system. Specific ocular (eye) causes include: conjunctivitis, uveitis, dry eye;
- Dry eyes: A gritty feeling or just sore eyes seems to be a common problem with arachnoiditis. In a few people, a condition called Sjogren's syndrome may be diagnosed: this involves dry eyes and mouth and joint pains. Dry eye syndrome is usually due to reduced aqueous tear production (keratoconjunctivitis sicca), reduced quality of the tear film, disorder of the corneal surface or a lid dysfunction. Other disorders that can cause dry eyes include rheumatoid arthritis and SLE, connective tissue disorders (sarcoidosis, amyloidosis) and Stevens-Johnson syndrome. Drugs that may cause reduced tear flow include: diuretics, antihistamines, tricyclic antidepressants (e.g. amitriptyline), oral contraceptive pill, atropine derivatives, and beta-blockers (this list is not comprehensive). Symptoms include transient blurred vision and aversion to bright lights. Schirmer's test may be performed to assess the possibility of Sjogren's syndrome. Artificial tear solutions such as Hypromellose 0.3% can be used at up to 30 minute intervals if severe (a preservative-free preparation is best); at night, simple ointment (or Lacrilube/Lubritears) provides more sustained lubrication. Topical steroids should be avoided. (Acetylcysteine eye drops can be useful if there is a problem with sticky, viscous mucous in the eye).
- Blurred vision: this is probably most commonly a result of medication such as morphine and related drugs. Other causes require full ophthalmic assessment. Anticholinergic drugs such as the antidepressant amitriptyline, may affect the ability to focus, as may morphine and related drugs.
- Pain around the eye: these can be sharp, lightning pains, which can feel as if they go right through the eye. They can be related to neuralgia (see below).

- Eye symptoms in migraine: these may include seeing an 'aura' before onset of the headache.
- Conjunctivitis: infective inflammation of the conjunctiva; chronic illness may generally debilitate and therefore predispose to infection.

Less commonly:

- Uveitis: inflammation of the eye: if the front of the eye is involved, the eye will be red, and there will be light sensitivity, and some reduction in vision; often it occurs in one eye and there is rapid onset of symptoms; if the back of the eye is affected, these symptoms may not occur, except for reduced vision which can range from mild to severe; both eyes may be affected.
- Floaters: these are tiny clumps of cells in the fluid behind the pupil (vitreous humour) at the back of the eye, which appear, however, to 'float' in front of the eye. They cast shadows on the retina, the nerve layer at the back of the eye. Floaters may appear as a variety of shapes including dots, lines, cobwebs, circles, clouds. Generally, they are harmless, but can be a nuisance if they interfere with activities such as reading. Occasionally, new floaters can arise due to posterior vitreous detachment which is when the vitreous gel shrinks away from the retina. This is more common in older middle-aged people who are nearsighted, have undergone cataract surgery, have had previous laser treatment, have had inflammation in the eye or have had head trauma. Most people learn to live with their floaters. Some specialists recommend laser treatment, whereas others suggest that this is likely only to 'rearrange' the floaters. The other surgical option, vitrectomy, carries risks of accelerated cataract formation, infection and retinal detachment.
- Horner's syndrome: often an acute condition which can occur after epidural injection: all the symptoms are on one side of the face. They comprise: drooping eyelid, skin feels warm and dry (no sweating) and pupil constricted. Horner's may also occur if spinal nerve roots in the neck are damaged.
- Raeder's syndrome: a combination of pain, drooping eyelid and constricted pupil; there may be a preceding history of episodic pain in or around the eye and cluster headaches. This is a benign condition that may arise during a cluster of headaches and resolving spontaneously once the headaches have ceased.
- Adie's Pupil: a 'tonic' (poorly responsive) dilated pupil, which may be associated with a generalised dysautonomia, that is, abnormal autonomic functioning (involuntary nervous system regulating blood pressure, sweating, gut function, sphincter tone etc. : see below) which is occasionally seen in patients with arachnoiditis.
- Thyroid eye disease: some arachnoiditis patients who have a history of a myelogram (oil or water-based contrast agent) may develop thyroid disorders. This could be related to the iodine content of the myelogram dye. Hyperthyroid disease may present with eye problems: this is termed Grave's disease. Common symptoms include: eyelid retraction, irritation in the eye, watery eyes (or dry eyes if the eyelid retracts considerably), redness, double vision, pain and reduction in vision. The eyes may appear to 'bulge' because the fat and muscles around the eye may be infiltrated with antibodies; this may put pressure on the optic nerve, and cause problems with vision. There may be difficulty in moving the gaze around, because the muscles

around the eye are not working properly. The most important aspect of treatment is to normalise the thyroid hormone levels. Steroids (given orally) may also be needed to reduce the pressure on the optic nerve. Dry eyes can be treated with topical lubricants. Rare problems that may occur:

- Optochiasmic arachnoiditis: a particular subtype of arachnoiditis; it may occur after eye surgery.
- Raised intracranial pressure shows up in eye examination as swollen optic disc (where the optic nerve leaves the back of the eye): known as papilloedema. This can result from hydrocephalus (a complication of arachnoiditis) or pseudotumour cerebri (Benign intracranial hypertension).

Some arachnoiditis patients have been told that their eye problems resemble those seen in Multiple sclerosis.

One of the initial symptoms of MS may be optic neuritis, which causes episodes of blurred or double vision.

Other problems may include darkening of the vision, loss of colour perception and occasionally flashes.

Pain may occur and be aggravated by movement of the eye: this can be a dull ache or a sharp jab on eye movement.

Pain may precede visual loss or may coincide with it. Patients tend to describe the visual loss as "a curtain coming down", "blurring" or "white-out".

Paroxysmal Retrobulbar neuritis may occur, causing repeated but transitory blurred vision, which may recur several times a day or only occasionally.

The whole period of disturbed vision tends to last 3-8 weeks, the expected duration of an MS exacerbation.

Devic's syndrome is a combination of severe optic nerve involvement and spinal cord deficits; this is more common in Japanese people than in Europe.

Double vision in MS is relatively common and this arises not from the eyes, but from involvement of the cranial nerves. (more details on MS will be available in a separate article).