

Smoking and the ophthalmologist

Smoking and the ophthalmologist

M Belkin

Emphasising the adverse effects of smoking on eye diseases

Both my daughters smoke. This fact annoys me greatly, not only because of the damage they are knowingly doing to themselves but also because it underscores the apparently insurmountable difficulties all of us have in trying to minimise the enormous health effect of this chronic self-poisoning. Why do intelligent, well-informed people like my daughters not give up this habit? Is it because of the chemical addiction originated by the first puff and enhanced by subsequent ones,¹ emotional dependence, provision of stress relief, the power of routine practices, social pressures, lack of information, the infinite capability that people have for denying threatening realities, the unwillingness of governments to reduce important revenue source or all of the above? I do not know the answer to this question, nor can I explain the failure of humankind to eliminate smoking, by far the most important modifiable risk factor for diseases of all body systems of users, and, in the form of second-hand smoke, of people in their environment. Smoking rates increase steeply the world over, mainly as a result of higher consumption in developing countries. Furthermore, the decline in smoking rates in Western countries stalled recently and, according to the Center for Disease Control and Prevention, teenage smoking in America is on the increase again. This occurs despite the clear evidence given by the World Health Organization that smoking is responsible for 10% of mortality in adults worldwide and will eventually kill half of all current smokers. Obviously, the threat of death, cardiovascular diseases, carcinoma of the lung and other cancers, emphysema and the multitude of other chronic and fatal diseases associated with smoking are insufficient to deter many people from smoking. Perhaps disseminating information about the risk of blindness associated with smoking, tobacco use being the main modifiable risk factor for eye diseases, may be a boost to the apparently less than effective smoking cessation and prevention campaigns. The evidence on the association of smoking with eye diseases is nowhere

as impressive as it is in relation to age-related macular degeneration (AMD). A 2–3.5-fold increase is observed in the various forms of AMD among smokers when compared with people who have never smoked.^{2,3} These figures make it apparent that even after the advent of effective neovascularisation inhibiting drugs, we cannot prescribe better medicine for AMD than smoking cessation. As is the case with most diseases associated with smoking, the risk for the spouse increases nearly twofold for non-smokers who have lived with a smoker for more than 5 years.³ Smoking also accelerates the development of diabetic retinopathy, thyroid ophthalmopathy (fourfold increase) and acute ischaemic optic neuropathy (16fold increase). A less known observation is that smoking delays the response to treatment of some conditions, such as scleritis and episcleritis.⁴ Of special ominous importance is the association between maternal smoking and childhood eye diseases, such as invasive meningitis, anophthalmia, optic nerve hypoplasia and strabismus. Smoking in pregnancy is associated with low birth weight and premature birth, and thus may lead to retinopathy of prematurity. When we consider all these severe eye conditions and the many non-ophthalmic paediatric and lifelong diseases associated with maternal tobacco use, we are tempted to consider smoking during pregnancy as a malicious attack on the child by his mother, akin to the battered child syndrome. Although the mechanism by which smoking facilitates most eye diseases can be assumed to be via its effects on vasculature, the mechanism whereby smoking accelerates cataractogenesis is uncertain. However, it has been clearly established that smokers of a pack of cigarettes a day more than double their risk for cataract.⁵ Smoking contributes especially to cortical and nuclear cataract, the risk being dose related.⁶ It was shown that smoking cessation considerably reduces the risk of cataract.⁷ In a recent Indian study⁸ (see p xxx), which showed no major association between cigarette smoking and cataract, a marked association with tobacco use in other forms was found. The fact that

smoking increases the prevalence of cataract is particularly relevant to developing countries, where, owing to the scarcity of sufficient surgical resources, cataract is the foremost cause of blindness. When we consider that the rapid increase in tobacco use in recent years is almost completely due to the rise in smoking rates in these countries, it becomes apparent that the magnitude of cataract blindness in the world can be considerably lowered by reducing the extent of exposure to tobacco, thus freeing more surgical facilities to non-smoking-related cataracts. An interesting corollary to this problem of developing countries is the finding that the social inequality in developed countries, which leads to excess male mortality in the lower social classes, is almost all owing to smoking being more common among these classes.⁹ It must be emphasised that, as is the case with the effect of smoking on non-ophthalmic diseases, there is no safe level of exposure to smoke. It is the duty of every ophthalmologist to inquire about his patients' smoking habits and to explain to the smokers in no uncertain terms that for the relevant ophthalmic diseases, smoking cessation is a part of the treatment, more effective in slowing down the disease's progression and thus preventing its clinical effect than many other therapeutic modalities available. Therefore, strongly advising the relevant patients to give up smoking should be as integral a part of medical practice as are the prescription of drugs and the performance of surgery. Inquiring about the patients' smoking habits and admonishing him or her against it should become an integral part of the treatment guidelines for all relevant diseases.

Actually, in view of the voluminous, definitive evidence about the severe adverse effects of smoking on eye diseases, not asking a patient about his or her smoking habits, not explaining the consequences and not chastising smokers to stop by emphasising that there is no safe level of smoking should be construed as medical malpractice.

Br J Ophthalmol 2006;**000**:1–2.
doi: 10.1136/bjo.2006.102004

Correspondence to: M Belkin, Goldschleger Eye Research Institute, Tel Aviv University, Sheba Medical Center, Tel Hashomer 52621, Israel; belkin@netvision.net.il

Competing interests: None declared.

REFERENCES

- 1 Gervais A, O'Loughlin J, Meshfedjian G, et al. Milestones in the natural course of onset of cigarette use among adolescents. *Can Med Assoc J* 2006;**175**:255–61.
- 2 Seddon JM, George S, Rosner B. Cigarette smoking, fish consumption, omega-3 fatty acid

- intake, and association with age-related macular degeneration. *Arch Ophthalmol* 2006;**124**:995–1001.
- 3 **Khan JC**, Thurlby DA, Shahid H, *et al*. Genetic factors in AMD Study. Smoking and age related macular degeneration: the number of pack years of cigarette smoking is a major determinant of risk for both geographic atrophy and choroidal neovascularisation, *Br J Ophthalmol* 2006;**90**:75–80.
 - 4 **Boonman ZF**, de Keizer RJ, Watson PG. Smoking delays the response to treatment in episcleritis and scleritis. *Eye* 2005;**19**:949–55.
 - 5 **Kelly SP**, Thornton J, Edwards R, *et al*. Smoking and cataract: review of causal association. *J Cataract Refract Surg* 2005;**31**:2395–404.
 - 6 **Krishnaiah S**, Das T, Nirmalan PK, *et al*. Smoking and its association with cataract: results of the Andhra Pradesh eye disease study in South India. *Invest Ophthalmol Vis Sci* 2005;**46**:58–65.
 - 7 **Christen WG**, Glynn RJ, Ajani UA, *et al*. Smoking cessation and risk of age-related cataract in men. *JAMA* 2000;**284**:713–16.
 - 8 **Raju P**, George R, Sathyamangalam RV, *et al*. Influence of tobacco use on cataract development. *Br J Ophthalmol* 2006;**xx**:xxx.
 - 9 **Jha P**, Peto R, Zatonski W, *et al*. Social inequalities in male mortality, and in male mortality from smoking: indirect estimation from national death rates in England and Wales, Poland, and North America. *Lancet* 2006;**368**:367–70.