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Blood splashes: an underestimated hazard to surgeons

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Recent evidence confirms the widespread belief that hepatitis B virus may be transmitted through the conjunctiva (S Polakoff, personal communication), and there are theoretical grounds for thinking that HIV might also be acquired in this way. In Britain few surgeons routinely use eye protection while operating, but in hospitals in the United States protecting the eyes is becoming the norm in centres where the prevalence of HIV carriage is high.¹ It is not known how often surgeons' eyes are splashed with body fluids. We attempted to assess the risk of infection by this route by counting the number of splashes of blood on our spectacle lenses at the end of each of a consecutive series of operations.

Methods and results

Both of us always wear spectacles when operating. Over three months we recorded the number of splashes of blood on our glasses after each operation and then cleaned the lenses carefully before the next operation. The nature and duration of each operation were recorded. Data were collected from a consecutive series of 257 operations.

Overall, we found at least one splash of blood after 64 operations (25%), the number of splashes ranging from one to 40, median four. More than 10 splashes

Incidence of blood splashes on spectacles during operations

Operations	No performed	Spectacles splashed
Type:		
Arterial	25	11
Gastrointestinal	40	24
Other	192	29
Duration:		
< 30 min	151	11
30-120 min	77	35
> 120 min	29	18

were present on eight occasions. There was a mean of 1.3 splashes per operation or 5.0 per case in which contamination occurred. We were aware of the contamination during the operation on only three occasions. The incidence of contamination varied with the type of operation and its duration (table). The mean number of splashes acquired per hour of operating in cases taking up to 30 minutes was half that in cases taking two hours or more (0.94 v 1.9). The incidence of contamination was slightly higher for one surgeon than for the other (28% v 22%), owing to a higher proportion of long or complex operations.

Comment

In general surgery fine drops of blood bombard the area around the surgeon's eyes during a quarter of operations. Both the incidence and the rate of contamination are higher in complex and long operations, but contamination can occur during minor procedures. We do not think that we are unusually messy surgeons, and the fact that we both had similar rates of contamination suggests that the results may be typical of general surgery and perhaps of all types of surgery. Most of the blood splashes were minute, and we were unaware of them in all but three cases. Such splashes are unlikely to trigger a reflex blink when hitting the eye, which is unlikely anyway to prevent infection occurring.

The surface area of spectacle lenses is substantially larger than that of the palpebral fissure, and only a proportion of the splashes that were picked up on the lenses would otherwise have entered the eye. Nevertheless, the incidence of deposits of blood was high. Each surgeon must decide on the basis of the available data whether the risk of infection is sufficient to justify wearing eye protection while operating. As the number of HIV carriers in England and Wales is estimated to be 36 000 - 148 000² we think that eye protection should become routine. Unfortunately, conventional spectacles provide only partial protection: several of the blood splashes were on the inner surfaces of our lenses.

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Oral contraceptives and diabetes mellitus

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Although it has been shown that in some women glucose tolerance deteriorates when they use oral contraceptives,¹⁻³ there is uncertainty about the clinical importance of these changes. In particular, do they predispose users of the contraceptive pill to an increased risk of clinical diabetes mellitus? An earlier report suggested that pill users were not at risk.⁴ It has been argued, however, that an increased risk may become

apparent only after prolonged observations of women who have used the pill for long periods of time.³ We present the latest findings from the Royal College of General Practitioners' oral contraception study, using data available at May 1989.

Patients, methods, results

Over a 14 month period starting in May 1968, 1400 general practitioners throughout the United Kingdom recruited 23 000 women who were using the contraceptive pill and 23 000 who had never used it. At six month intervals thereafter the doctors recorded for each woman still under observation details of any oral contraceptives prescribed and all reported episodes of morbidity. These analyses are based on all cases of