

CORRESPONDENCE

Glove puncture in the post mortem room

Weston and Locker document the high incidence of glove puncture in the post mortem room and advocate "frequent glove changes and hand washing throughout the post mortem examination."¹ An alternative is to wear thicker gloves which are less easily punctured. I have used for some time now Long Nitrosolve gloves (Marigold Industrial) over a standard pair of thin surgical gloves. The heavy gloves are resistant to puncture and also afford protection against splashes almost up to the elbow. They feel clumsy at first but one soon becomes used to them. They can be washed and reused several times and so are also economical.

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¹ Weston J, Locker G. Frequency of glove puncture in the post mortem room. *J Clin Pathol* 1992;45:177-8.

Pathologists should be grateful for the data provided by Weston and Locker on the prevalence of glove punctures incurred during necropsies. But I worry about their conclusions.

They show an 8% prevalence of glove punctures across health care workers in the mortuary, and a 3-4-fold increased risk of puncture if a technician eviscerated the body compared with a pathologist. However, I think that more than "education... to promote awareness" is required. The suggested remedy—frequent changing of gloves during the procedure—is analogous to shutting stable doors after bolting horses.

The writers state that a small trial of double gloving was performed but that no significant protection was provided, without giving us the actual figures. Since 1989 I have performed more than 400 necropsies on HIV seropositive adults and children, always wearing two pairs of gloves: inner "surgical" gloves and outer, thicker household rubber gloves. Other pathologists regularly performing HIV seropositive necropsies with whom I have discussed the issue also favour such double gloving.

I have not rigorously tested my used gloves, but on the subjectively uncommon occasions when the outer glove was punctured, the inner glove appeared to have prevented any contamination of the skin. Given my prejudices, and the fact that most of my necropsy work is on infectious disease cases, I would now be unwilling to partake in a controlled comparative trial of single versus double gloving.

May I recommend discussion of the following proposals for necropsies:

1 Medicine and pathology have irrevocably

changed since the HIV epidemic arrived: thus one should assume that every cadaver is potentially infected.

2 Universal precautions, involving the use of double gloves, impermeable disposable gowns, masks, hats, and eye protection, should be used during all necropsies. This applies to both technicians and pathologists.

3 We should move to minimise the chance of glove puncture by adopting non-pointed instruments; round-ended scissors are obvious, and non-pointed scalpel blades are available.

4 We should re-evaluate dissection procedures in the light of the questions being asked; for example, in HIV seropositive cases removal of the prostate does not usually produce further relevant information and could be omitted.

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I read with interest the article by Weston and Locker regarding the frequency of glove puncture in the post mortem room. I am sure that few practising histopathologists could argue with their finding that glove punctures, both noticed and unnoticed, are extremely common, and a similar observation was made by Babb *et al* in 1989,¹ although actual wounds are, in my experience, comparatively rare in experienced staff. This has undoubtedly always been the case in post mortem work and consequently, were it to pose a real rather than a potential health risk, there should be good evidence available. In their morbidity survey of post mortem room staff, Hall *et al* found no recorded days of absence for skin disorders or cuts and lacerations among pathologists and a very low number for technicians.² Consequently, I would conclude that unnoticed glove puncture is not an important health hazard and would not justify the major expense incurred by using two pairs of gloves for each post mortem examination. It would appear from the available evidence that the risks associated with glove puncture are theoretical rather than real and do not justify multiple glove changes during necropsy examination. The potential for infection is adequately dealt with by normal post mortem room hygiene procedures.

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¹ Babb JR, Hall AJ, Marlin R, Ayliffe GAJ. Bacterial sampling of post mortem rooms. *J Clin Pathol* 1989;42:682-8.

² Hall AJ, Aw TL, Harrington JM. Morbidity survey of post mortem room staff. *J Clin Pathol* 1991;44:433-5.

Drs Weston and Locker comment:

We note that Lindley and Lucas advocate wearing heavy duty gloves over surgical gloves for post mortem examinations. We have ordered some Long Nitrosolve gloves to try out. Dr Lucas suggests that his inner gloves protect him from skin contamination if his outer gloves are punctured. However, as we point out in our paper 31.8% of glove punctures go unnoticed and this is where the danger of prolonged skin contact with potentially infected material lies.

We do not mean to imply that changing gloves frequently and especially at the end of the evisceration protects against hand contamination, but that it prevents *prolonged* skin contact with contaminated material via an unnoticed glove puncture.

Dr Dunn's opinion that the extra cost incurred by frequent glove changes during postmortem examinations is not justified concerns us. The paper cited reports that one case of tuberculosis and two of hepatitis B occurred in 76 mortuary technicians over 12 months. There were also 21 minor lacerations. While this may not cause much immediate morbidity, the consequences of infection with HIV or indeed with hepatitis B or tuberculosis due to an unnoticed glove puncture would be incalculable. We agree that to date the risk of infection via an unnoticed glove puncture may have been slight rather than real, but as the prevalence of HIV increases this trend could well reverse and is not a risk worth taking. All possible protective measures should be practised. This view also seems to be held by Dr Lucas.

Diagnostic value of fibronectin determination in cerebrospinal fluid

Torre *et al* recently reported increased concentrations of fibronectin in the cerebrospinal fluid (CSF) of patients with bacterial meningitis, but not with viral meningitis, determined by a commercial turbidimetric immunoassay.¹ Their results correspond to our study on the differential diagnostic value of CSF fibronectin determination using an enzyme linked immunosorbent assay,² although their mean (SEM) control concentrations were somewhat higher (6.7 (1.3) mg/l as opposed to 3.3 (0.3) mg/l) and their mean concentrations in bacterial meningitis were far lower (13.9 (6.1) mg/l compared with 64.0 (6.3) mg/l in our study. Their observation of decreased fibronectin concentration (2.2 (1.8) mg/l) in viral meningitis is very interesting as we did not find any decrease in various neurological disorders including lumbar disk disease, multiple sclerosis, acute demyelinating polyradiculoneuropathy, Guillain-Barré, neurologically asymptomatic HIV infection, tick-borne encephalitis, and diffuse leptomeningeal neoplasia. However, we detected very high concentrations of CSF fibronectin not only in bacterial meningitis but also in tick-borne encephalitis (26.7 (4.4) mg/l),² neuroborreliosis (27.0 (3.6) mg/l),² and notably in leptomeningeal neoplasia (58.4 (16.0) mg/l).¹ Clinical data will help to distinguish infectious from neoplastic cerebrospinal disease in most patients but increased CSF