A little bit more on the slide

In 2001–2, 89% of cancers detected by the UK National Health Service Breast Screening Programme (NHSSBP) were diagnosed preoperatively. In 1996–7, the figure was 63%. Year on year increases in the preoperative diagnosis rate have paralleled the increasing use of needle core biopsy (NCB). There has been a threefold increase (from 17% to 66%) in the proportion of cancers diagnosed by a B5 NCB over this period. The proportion of cases diagnosed by fine needle aspiration cytology (FNAC) alone fell from 19% in 2000–1 to 13% in 2001–2.

Although in appropriate circumstances FNAC may be a sensitive and cost effective technique in the diagnosis of breast cancer, its use in the NHSSBP is increasingly limited. In the Leeds Breast Screening Assessment Unit in the year 2001–2 we performed 124 FNACs and 487 NCBs. This contrasts with 243 FNACs and 92 NCBs in 1995–6. Our preoperative diagnosis rate has increased from 59% to 92% over the same period.

Better characterisation of malignant lesions and the ability to perform ancillary investigations, such as hormone receptors and biomarker studies (for example, HER-2 analysis), are diagnostically important in the assessment of a lesion related to eye disease does not appear to be considered in the extensive literature reporting biochemical and toxicological findings in the vitreous humour. This possibility, however remote, is not discussed by Jones and Holmgren in their paper.

Ophthalmic pathological examination indicates that the vitreous humour is involved in a wide range of eye diseases, and can be greatly abnormal by virtue of microscopic changes in the protein and cellular content. In our recent paper on necropsy techniques in ophthalmic pathology, we recommend that vitreous humour is not sampled for biochemical examination from eyes with a history of retinal detachment, surgical manipulation, or posterior chamber disease affecting the vitreous humour. Non-vitreous fluids encountered in some eyes include blood, subretinal proteinaceous fluid, inflammatory exudates, and artificial vitreous (for example silicone oil) used in some vitreoretinal surgery. Some eyes may be so calcified or even ossified that vitreous sampling may be impossible, and vitreous sampling should be aborted in any eye that is small, wrinkled, and hard, or when there is firm (or gritty) resistance to puncture. We believe that only “normal” vitreous fluid should be sampled for biochemical analysis, because disease affecting the vitreous humour may greatly alter its biochemical and cellular composition and lead to misleading results. An ophthalmic history taken from the family, clinical notes, or information recorded by the family doctor or optician would probably alert the chemical pathologist to the presence of eye disease. Jones and Holmgren quote Sousa et al in their paper. Comparison between ethanol levels of vitreous humour on both eyes in the same individual, Proceedings of the XXXV Annual Meeting, The International Association of Forensic Toxicologists, Padova: Centre of Behavioural and Forensic Toxicology, University of Padova, 574–78) as reporting excellent agreement between the concentrations of ethanol in the left and the right eyes, and it seems likely that major discrepancies between the concentrations of chemicals in the different eyes might indicate that one eye is abnormal (or that one sample is contaminated—for example, with blood). Differences in colour or viscosity may indicate contamination, or the presence of silicone oil (which would float on water). Silicone oil may adversely affect the measurement of many analytes, and make the interpretation of those analytes more difficult. If its presence is suspected, careful examination of a drop of vitreous humour with a hand lens will reveal oily droplets of silicone. Centrifugation of the sample, which should be done in any case before biochemical or toxicological analyses, will separate vitreous fluid from an eye into which silicone has been injected in life into aqueous and oil phases. The aqueous phase can then be carefully separated and used for the analyses. However, the results should then be interpreted with even more caution than one normally has to use in the interpretation of such quantitative analyses. Despite this, less than optimal vitreous humour samples may be extremely useful for qualitative toxicological screening.

Although the likelihood of intrinsic ophthalmic disease is small, we believe that this should be considered in the interpretation of biochemical and toxicological findings from the vitreous humour. Awareness of this potential problem, attention to the colour and viscosity of vitreous humour samples, and the assay of samples from each eye will probably ensure that errors do not occur. If only one vitreous humour sample is available, and where the biochemical result is of particular forensic or medical importance, we recommend that an ophthalmic history should be obtained and enquires made to exclude the presence of ophthalmic conditions that might affect the chemistry of the vitreous humour and the interpretation of the result.

M A Parsons
Ophthalmic Sciences Unit, Royal Hallamshire Hospital (Floor O), Glossop Road, Sheffield S10 2JF, UK; a.parsons@sheffield.ac.uk
R D Start
Department of Pathology, Chesterfield Royal Hospital, Cawthorne, Chesterfield S44 5BL, UK
A R W Forrest
Medico-Legal Centre, University of Sheffield, Watery Street, Sheffield S3 7ES, UK

References

www.jclinpath.com
Concurrent vitreous disease may produce abnormal vitreous humour biochemistry and toxicology

M A Parsons, R D Start and A R W Forrest

*J Clin Pathol* 2003 56: 720
doi: 10.1136/jcp.56.9.720-a

Updated information and services can be found at:
http://jcp.bmj.com/content/56/9/720.2

References

This article cites 3 articles, 3 of which you can access for free at:
http://jcp.bmj.com/content/56/9/720.2#BIBL

Email alerting service

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/