ABSTRACTS OF THE BRITISH ASSOCIATION FOR CYTOPATHOLOGY SCIENTIFIC CONFERENCE AND TRADE EXHIBITION 2012

PLENARY SPEAKERS

08.30–09.00 Saturday 15th September 2012
HPV PRIMARY SCREENING
K. Denton
Department of Cellular Pathology, Southmead Hospital, Westbury on Trym, Bristol, UK

The case for HPV primary screening is often presented as an obvious improvement on cervical cytology as a method for preventing cervical cancer. Certainly this may be true in countries without an established, high quality cervical cytology programme, but what about the UK. The ARTISTIC trial was set up to answer the question in one of the most well organised screening programmes in the world. After three screening rounds, the answer became clear. HPV primary screening with cytology triage could give a slightly higher sensitivity and a longer duration of protection than cytology with HPV triage, for a similar cost. But it was abundantly clear that just switching was not an option. Cervical screening in the UK is a lot more than just a primary screening test. What would be the implications for colposcopy, for IT, and for cytology? Which HPV test? What should we tell women, and sample takers? A pressing question was how would cytology triage perform in a setting where only samples known to be HPV positive would be screened. Does HPV primary screening offer the opportunity to introduce other tests to the programme, to improve sensitivity or specificity?

These are big issues which will take time to resolve. National plans for evaluating this change in a practical sense will be discussed.

15.30–16.00 Saturday 15th September
ABC 3. HAS THE ALPHABET CHANGED?
J. H. F. Smith
Department of Histopathology & Cytology, Royal Hallamshire Hospital, Sheffield, UK

The NHS Cervical Screening Programme (NHS CSP) is widely recognised to be one of the most successful cancer prevention programmes in the world. The provision of guidance on cytology reporting has been pivotal to the success of the programme, ensuring that standards are upheld, and that rigorous evaluation and quality assurance take place. These standards were first outlined in 1995, with the publication of Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical cytopathology (ABC), subsequently revised and expanded in a second edition published in 2000.

Recent major changes to the NHSCSP as a result of national implementation of liquid-based cytology (LBC) sampling, and high-risk human papillomavirus (HR-HPV) testing for triage of low-grade cytological abnormalities and follow-up after treatment of CIN (test of cure) prompted the NHSCSP and Royal College of Pathologists to agree that an updated version of ABC was required. The principal changes introduced in the revised document (‘ABC 3’) are that the NHSCSP will adopt the revised BSCC terminology for reporting cervical cytology. Guidance on the management of abnormal cytology results has been linked to this terminology and updated to take account of HR-HPV testing for triage and test of cure.

In addition, the existing performance indicators for evaluating cervical cytopathology have been revised and expanded to include new measures: the referral value (RV), the mean CIN score (MCS), the abnormal predictive value (APV), and the HR-HPV-positive rate for borderline/low-grade samples. Some of these measures take into account variations in background incidence of cervical neoplasia and although the data are examined at the level of the laboratory, they depend not only on the performance of the cytology laboratory but also the associated colposcopy service and histopathology laboratory and hence permit evaluation of a cervical screening service.
The revised publication has also been expanded to provide more information for pathologists about the screening process in general. A short chapter on cytology is included for the benefit of those histopathologists reporting on behalf of the NHCSCP, who neither report cervical cytology nor have cytology laboratories affiliated to their pathology laboratories. This provides all of the information relevant to the programme, albeit in an abridged form, including information about follow-up protocols and HPV triage. As histological findings should also be correlated with appearances at colposcopy, a short chapter on the latter has been included to ensure that histopathologists are aware of the indications for colposcopic referral, the methods of treatment available at colposcopy, and the protocols for the follow-up of histologically confirmed preinvasive and invasive disease. Inclusion of these two chapters emphasises the importance of working in multidisciplinary teams – an essential requirement for the screening process. The chapter on audit and quality assurance has been expanded to include RCPath key performance indicators, NHCSCP standards for laboratories (and pathologists), and guidance on auditing invasive cervical carcinoma, colposcopy, and histopathology reports. Finally, the importance of providing accurate information to cancer registries for the purposes of cancer registration is covered in a separate chapter, which also details the relationships of the registries with other national organisations.

It is hoped that this publication will enhance the understanding by histopathologists of the different components of the cervical screening programme, and help them to provide the best possible diagnostic service to support it.

16:00–16.30 Friday 14th September 2012
ANDROLOGY IN 2012 AND BEYOND
A. A. Pacey
Academic Unit of Reproductive and Developmental Medicine, University of Sheffield Medical School, Sheffield, UK

Approximately one in six couples experience infertility and seek medical assistance in order to try and conceive a child. In approximately 50% of cases a problem is identified with the male partner. Clinical assessment of male fertility is currently undertaken through the macroscopic and microscopic analysis of ejaculated semen by a trained scientist in a procedure known as ‘semen analysis’. Perhaps surprisingly, although the techniques involved have been subject to regular review by the World Health Organisation, they remain largely similar to those developed in the 1950s and have advanced very little since that time. Evidence suggests that there can be considerable variation in the results obtained from different laboratories and that significant effort needs to be put into training and quality control.

In many respects, we have been slow in developing better tests that might allow us to assess male fertility and perhaps more importantly identify good sperm from bad. Whilst several research groups have proposed a variety of sperm function tests (e.g. sperm penetration through mucus, measurement of acrosome reaction, ability of sperm to hyperactivate, or measure sperm DNA integrity) none have yet made it into routine clinical practice and each has the same downfall in that the test is destructive and cannot be used to directly select sperm that can then be used in assisted conception. More recently, a few non-destructive methods of sperm selection have been developed and these include separating sperm on the basis of: (i) electrical charge; (ii) high magnification optics (IMSI); and (iii) the ability of sperm to bind to microdots of hyaluronic acid on the bottom of culture dishes. Each of these innovations will be reviewed in this lecture and their future clinical potential examined.
THE ETHIOPIA EXPERIENCE
J. Palmer
Consultant in Gynaecological Oncology, Sheffield Teaching Hospital, Sheffield, UK

Ayder Hospital is a tertiary referral centre for the Tigray Region (population of 4.3 million) in Northern Ethiopia. Currently the hospital has no formal cervical screening programme or colposcopy service. Cervical cancer is the second most common female cancer in Ethiopia resulting in an estimated 4600 new diagnoses and 3200 women deaths annually. The projected number of new cases for 2025 is 7700. Only 0.6% of Ethiopian women are screened and HPV vaccination is currently not available.

Our aim was to establish the feasibility of setting up a cervical screening programme and colposcopy service and initiate training links with the department.

Methods: As part of a larger team, a gynaecological oncologist and lead colposcopist and sub-specialty trainee in gynaecological oncology, visited the Makelle gynaecology department in November 2011. We identified little investment in infrastructure, training and laboratory capacity. Currently there is one histopathologist in the whole of Tigray. There is a functioning colposcope and diathermy machine within the gynaecology clinic, but no one is trained to use them.

Results: As has previously been demonstrated in similar health care settings around the world, the service in its current state cannot support a national screening programme.

Conclusions: We plan to explore the feasibility of using the WHO-recommended VIA (visual inspection with acetic acid) method alongside the ZilicoEpitheliometer and careHPV as an adjunct to colposcopy in the diagnosis of high grade CIN. We are also exploring the practicability of setting up a distance learning programme.

INVISIBLE RISKS
B. Toft OBE
Professor in Patient Safety, University of Coventry, UK

When the topic of patient safety is discussed it frequently revolves around the policies, procedures, checklists and systems it is hoped will reduce the chance of an adverse risk eventuating. However, what is rarely discussed or questioned are the human factors that help create an individual’s ‘situational awareness’.

Every day, people make scores of decisions, each person trusting that they have made the most appropriate ones. Unfortunately there are powerful, human factors that can affect individuals and groups of people which, if not recognised and managed effectively, can increase the risk of inappropriate decisions being made. It is some of these potentially dysfunctional mechanisms which are part of our human condition that will be discussed in this presentation.
15.00–15.10
BAC SURVEY INTO THE USE OF GYNAECOLOGICAL AND NON-GYNAECOLOGICAL CYTOLOGY
P. Cross
Department of Cellular Pathology, Queen Elizabeth Hospital, Gateshead, Tyne and Wear, UK

Abstract: There is much regulation in the field of gynaecological (Gynae) cytology, but very little in the area of non-gynaecological (NG) cytology. The BAC undertook a web based survey via its membership and BAC website to better understand the use and practice of cytology.

In the area of Gynae cytology, 93.3% of respondents undertook gynae cytology, with 59% using Hologic equipment and 41% using Surepath. 12% of respondents worked in a lab with an automated gynae screening/reporting system, and 77% used a rapid re-screen method, and 21.3% used rapid pre-screen method for IQA. Variable HPV testing kits were used. In NG cytology, 94.8% of respondents undertook NG cytology. Nearly all respondents undertook the ‘common’ NG samples (urine, serous fluids etc, and a range of FNA/brushing sites). 86% reported synovial fluids, and 13% reported brain samples. There was a wide range of other samples done infrequently. Most labs used a PAP or Giemsa stain routinely, but infrequently. Most labs used a PAP or Giemsa stain routinely, but

Take Home Message(s): Whilst there is much uniformity of approach to the use of Gynae and NG cytology, there is still however quite marked variation in NG use. The majority of respondents felt their practice would benefit from a NG technical scheme. This survey, the first of its kind, will be used and built on to help shape and produce guidance to help maintain and improve the delivery and quality of cytology services in the UK.

References:
1. Tissue Pathways for exfoliative and fine needle aspiration cytology RCPath 2010.
2. Recommended Code of Practice for Laboratories Participating in the UK Cervical Screening Programmes BSCC 2010.
3. BSCC Code of Practice – fine needle aspiration cytology BSCC 2009

15.10–15.20
MORPHOLOGY AND FISH IN DETECTION OF LOW GRADE UROTHELIAL NEOPLASIA
M. C. N Mason, A. Chandra and M. Neat
Department of Pathology, Guys and St Thomas’ Hospital, London, UK

Abstract: Urine cytology is highly sensitive and specific for the detection of high grade bladder tumours (specificity 95/97%1 and sensitivity 64%2). However, it is less effective in the diagnosis of low grade tumours. Urine cytology may also be difficult to interpret where there has been previous treatment with BCG or chemotherapy. Various biomarkers have been proposed as adjunct to urine cytology to reduce the need for cystoscopy in equivocal cases, among them fluorescence in situ hybridization (FISH), which tests for aneuploidy of chromosomes 3, 7 and 17 and loss of 9p21. We compared the results of cytology and FISH for 41 patients (56 tests in total). When correlated with histology, FISH had a sensitivity of 66.7% and a specificity of 85.7%. When applied to those cases with atypical, probably benign cytology (C3), FISH was negative in 17 cases and positive in four.

Our findings suggest that FISH testing is a useful adjunct to urine cytology, especially in cases where a low grade tumour is suspected or where interpretation is difficult because of poor preservation, reactive changes or instrumentation.

Take home message(s):
• Cytology is highly sensitive and specific for detecting high grade tumour. However it is less effective in diagnosing low grade tumours or tumour recurrence after treatment.
• FISH and cytology overall have similar sensitivity and specificity. However FISH is not affected by the presence of benign (inflammatory) conditions.
• The use of FISH as an adjunct may provide extra information in cases with equivocal cytology, improve the diagnosis of low grade tumours and reduce the number of surveillance cystoscopies required after intravesical therapy.

References:

15.20–15.30
AN AUDIT OF REPORTING THYROID FNA SPECIMENS AT THE QUEEN ELIZABETH HOSPITAL IN GATESHEAD
S. Upadhye, P. Newton, P. Cross and J. D. Hemming
Department of Cellular Pathology, Queen Elizabeth Hospital, Gateshead, Tyne and Wear, UK

Background: The purpose of this study was to share our experience as a DGH cytology lab reporting thyroid fine needle aspiration cytology. At our centre we report thyroid FNA’s for ENT surgeons,
medical endocrinologists and act as a spoke, in a “hub and spoke” arrangement for two hospitals. Thyroid surgery is carried out at the two hubs (Newcastle and Sunderland hospitals). Thyroid gland nodules are a common problem and the thyroid gland is the most common endocrine organ sampled by FNA. It is important to continue thyroid gland FNAs as it can make real difference to patient management. Currently a combination of imaging, endocrine studies and cytological assessment is recommended for the evaluation of thyroid nodules. The Royal College of Pathologists has published guidelines on the reporting of thyroid cytology (1), and recommends the use of numerical reporting system with five categories (Thy1-Thy5). We correlated the accuracy of thyroid gland fine needle aspiration cytology results reported in the categories (Thy3-Thy5) at our District General hospital with histology /follow up results at hubs, (Specialist /Tertiary referrals centres).

Method: We used our Win path pathology system to search for thyroid FNAs using SNOMED code (T 96 000) performed in the years 2006–2012, and the numbers of cases in each diagnostic area were recorded. For cases scored Thy3-Thy5, the pathology systems at Gateshead, Sunderland and Newcastle were searched to see if an excision had been performed and the histological diagnoses from the excisions were recorded.

Results: For the 7 years a total of 726 thyroid FNAs were received in the department.

Conclusion/Take Home Message: The risk of malignancy for the diagnostic categories (Thy3–Thy5) is in keeping with the figures suggested by the Royal College of Pathologists (1). The scoring categories are accurate in distinguishing between certainties of malignancy associated with Thy5. A high rate of malignancy is associated with Thy4. Further sub-classifications of Thy3 categories into Thy3a (one out of 14 cases) and Thy3f (five out of 22 cases) showed a higher risk of malignancy is associated with Thy3f. Thyroid nodule fine needle aspiration cytology can be performed in a DGH with a high standard of diagnostic accuracy, the results of which play a key role in patient management.

Reference:

This is tabulated as:

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<th>Number</th>
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<th>Thy2</th>
<th>Thy3</th>
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<td>58%</td>
<td>11%</td>
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<td>41%</td>
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<td>8%</td>
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<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>102</td>
<td>31%</td>
<td>52%</td>
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</tr>
<tr>
<td>2011</td>
<td>136</td>
<td>36%</td>
<td>48%</td>
<td>12%</td>
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<td>0%</td>
</tr>
<tr>
<td>2012</td>
<td>52</td>
<td>33%</td>
<td>43%</td>
<td>15%</td>
<td>3%</td>
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</table>

In total, 86 cases were scored Thy3-Thy5 in the 7 year period as follows: Thy3–69, Thy4–12, Thy5–5.
SATURDAY 1ST SEPTEMBER 10.45–11.45
GYNAECOLOGICAL CYTOLOGY

10.45–10.55
AUDIT OF OUTCOME OF SMEARS REPORTED AS BORDERLINE, HIGH GRADE DYSKARYOSIS NOT EXCLUDED
M. Ashton-Key1 and D. Fowler2
1University Hospital Southampton Foundation Trust, Southampton, UK, 2ST1 Cellular Pathology, University Hospital Southampton Foundation Trust, Southampton, UK

Abstract: The interpretation of samples with clusters of hyperchromatic crowded nuclei is diagnostically challenging and although these may be reactive it is difficult to rule out high grade dyskaryosis. Where there is diagnostic uncertainty, these cases have been termed borderline with high grade dyskaryosis not excluded (BHG) and the patient is referred for colposcopy. The aim of this study was to establish the clinical outcome of BHG smears. Thirty-two smears reported as BHG between 01/01/2009 and 31/03/2009 were identified and 29 were reviewed by 11 cytologists of varying experience. The smears were classified as negative, HPV changes, BHG, mild dyskaryosis, moderate dyskaryosis, severe dyskaryosis, and glandular abnormalities. A control group of 14 recurrent squamous borderline cases were included. In the study group no case had uniformity of diagnostic opinion on review. 10/11 reviewers gave a diagnosis of high grade dyskaryosis for two cases and 9/11 reviewers gave a diagnosis of low grade abnormalities or normal for two cases. For 25 cases opinion was split across all categories. For the control group for 10/14 cases all reviewers gave a diagnosis of low grade abnormality or normal. Of the initial 32 cases, 17 (53%) were found to have a high grade lesion on biopsy. Re-audit between 01/01/10 and 31/03/10 found 16 borderline high grade smears and eight had high grade changes on biopsy.

Take Home Message(s):
• Hyperchromatic crowded groups of cells are diagnostically challenging.
• A significant proportion of patients with a BHG smear will have high grade dysplasia on biopsy.
• Numbers of BHG smears fell with increasing LBC experience.
• Re-audit following the introduction of HPV testing would be appropriate to assess outcome of this group.

10.55–11.05
AN AUDIT OF CLINICAL OUTCOME OF BORDERLINE GLANDULAR SMEARS
J. T. T. Lai1, N. Singh2 and M. Ashton-Key2
1Southampton University, Southampton, UK, 2University Hospital Southampton Foundation Trust, Southampton, UK

Abstract: Cervical smears showing borderline glandular change (BGC) are uncommon but immediate referral to colposcopy is required under the current guidelines.1 These changes may be due to cervical adenocarcinoma2 or caused by a variety of benign conditions. The aim of this audit was to establish if the current referral guidelines of urgent colposcopy are justified. Smears reported as BGC between 2006 and 2011 were identified. For each smear the subsequent histological outcome was recorded. Using these data PPVs of BGC for all grades of dysplasia or malignancy, high-grade abnormalities and glandular abnormalities were calculated respectively.

Results: Thirty-five smears and their corresponding histology reports were identified. The incidence of BGC ranged from 0.01% to 0.02% of total annual smears. Histology demonstrated dysplasia or malignancy in 13 cases, one inadequate biopsy and 21 cases showing benign changes. The PPVs of BGC for any abnormality, for glandular abnormalities, and for high-grade abnormalities were 37%, 14% and 31% respectively. A significant proportion of patients with BGC smears will have a biopsy showing dysplasia or malignancy and the current guidelines advising colposcopy are justified. The introduction of HPV testing will change the management of these smears.

Take Home Message(s):
• Cervical smears showing borderline glandular changes are uncommon.
• A significant proportion of these patients will have dysplasia or malignancy on biopsy and referral for colposcopy is appropriate.
• Re-audit following the introduction of HPV testing would be useful to assess outcome and HPV status of this group.

References:

11.05–11.15
AN EVALUATION OF THE BD FOCAL POINTTM IMAGING SYSTEM NO FURTHER REVIEW SLIDE SCAN RESULT CATEGORY FOR ROUTINE USE WITHIN THE CERVICAL SCREENING PROGRAMME IN WALES – THE STORY SO FAR...
D. S. Nuttall and B. G. Rose
Cervical Screening Wales, Screening Division, Public Health Wales, Cardiff, UK

Abstract: Between 2006 and 2011, over 51,000 samples were scanned on the BD Focal Point Imaging system (FPGS) within four Welsh screening laboratories. This study concentrates on the No Further Review result category of the FPGS, and its negative predictive potential for SurePathTM liquid based cytology (LBC) samples was assessed.
The evaluation was unique in two ways:

- Multiple laboratories were involved, maximising the samples available for analysis. The technology’s performance was monitored, evaluating potential multi-centre implementation scenarios.
- The technology was in use during a period of increased screening programme activity resulting from high profile media attention of the illness and subsequent death of a popular celebrity from cervical cancer. The associated heightened awareness of cervical cancer screening throughout the UK and resultant increased detection of High Grade Cervical Intraepithelial Neoplasia affected the output of the BD FPGS system in use within Wales. This was attributed to the usual calibration parameters being unable to manage a sample population containing more HG abnormalities than normal, and the NFR function behaved in a manner not previously documented.

Further analysis on the 2 year histological outcome from samples that were categorised as NFR was performed within the laboratory screening programme in Wales. The emphasis was on CIN 2+ detection rates and the findings proved encouraging, of special interest is the reduction in cancer rates in women whose samples were designated as NFR. Possible implementation models and current progress within Wales are discussed. On the basis of this evidence along with NHS CSP approval, NFR was adopted in Wales and this implementation is described.

Reference:
1. In preparation for publication.

11.15–11.25
AN AUDIT OF HIGH RISK HPV POSITIVITY OF HIGH-GRADE CERVICAL CYTOLGGY USING COBAS® 4800
K. M. Ellis1, J. Crossley1, N. Dudding1, C. J. Teather2 and J. H. F. Smith3
1ABMS, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK; 2ABMS, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK; 3Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

Background: Triage of low grade cytology and ‘test of cure’ (ToC) using high-risk (HR) HPV testing was introduced nationally in April, 2011 following the outcomes of the sentinel sites implementation study.1 The next phase is to introduce primary screening using HRHPV. As one of the original sentinel sites, Sheffield Teaching Hospitals NHS Foundation Trust will be one of the laboratories that participate in the implementation of HRHPV primary screening. The cytology department started HPV testing ‘in-house’ from January 2012 using Cobas® 4800. Daily runs for HPV triage and ToC are performed to meet the 14 day cervical cytology turn around target.2 However not all the wells are used when HPV testing and it was proposed that any spare wells would be used to test high grade cytology to assess HPV status and genotype.

Methods: One hundred and seventy cytology samples reported as cervical intraepithelial neoplasia grade 2 or higher (CIN 2+) and seven with non-cervical pathology. This equates to a positive predictive value (PPV) for cytology of 87.7%. 11 (8.1%) of the 136 samples with significant disease were HPV negative comprising the seven non-cervical cases and four CIN2+ cases. This equates to a sensitivity of HPV for significant disease of 91.9%. Importantly, HPV was detected in cervical glandular lesions, but was not detected in the limited number of non-cervical glandular lesions we tested. When these non-cervical lesions are excluded, there were 129 cases with significant cervical disease and HPV was detected in 125 cases, which equates to a sensitivity of 96.9%.

Discussion: The NHSCSP is moving towards excluding non-cervical disease from the cervical screening protocols, as demonstrated in Achievable standards, Benchmarks for reporting, and Criteria for evaluating Cervical Cytology (ABC) where the screening management of non-cervical lesions is ‘routine recall’. Cervical cytology is capable of detecting additional pathological processes such as infections, endometrial and extra-uterine disease, however these conditions fall outside the remit of the NHSCSP which is to prevent cervical cancer. HRHPV is the main cause of cervical cancer3 and the programme is planning to introduce primary screening using HPV testing as this has been shown to be a more sensitive test for cervical disease compared to cervical cytology. Although data in the ARTISTIC trial demonstrated a false negative rate of 4.3% on high grade cervical lesions, this is still lower than cytology.3 Samples which test positive for HPV will then be triaged with a reflex cytology test. However, as we move to this method of screening the additional pathologies that are currently detected through cervical cytology may remain undetected with HPV testing, such as demonstrated in this small study. This is consistent with the current literature which demonstrates low numbers of non-cervical lesions detected through HPV testing.6,7

Take home message
- HPV testing will not pick up all of non-cervical lesions, therefore primary care and women in the programme need to be aware of the limitations and in particular referral pathways for women who present with symptoms.
- Will impact on the practice for gynaecology/gynaecologists.
- There is a false negative rate with HRHPV testing but is thought to be less that cervical cytology, however HPV testing does not have the specificity of cervical cytology.
- No screening programme is perfect and expectations should remain within the limitations of the test employed.

References:


Table 1. HR HPV genotypes by cytological grade

<table>
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<th>HPV grade</th>
<th>Severe dysk</th>
<th>? Invasive</th>
<th>? Glandular neoplasia</th>
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<td>HPV 16</td>
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</tr>
<tr>
<td>HPV 18</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>HPV other</td>
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<td>1</td>
</tr>
<tr>
<td>HPV 16 and 18</td>
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<td></td>
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<tr>
<td>HPV 16 and other</td>
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<td></td>
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<tr>
<td>HPV 18 and other</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>HPV 16, 18 and other</td>
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<td></td>
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<tr>
<td>No HPV detected</td>
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<td>11</td>
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Table 2. HR HPV genotypes by histological outcome

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<th>HPV 18</th>
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<tr>
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Table 3. Breakdown of Non-cervical Disease

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<th>Source</th>
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<td>Endometrial Ca</td>
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<tr>
<td>Malignant melanoma</td>
<td>Primary care</td>
<td>Abnormal discharge/cervix</td>
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</table>
Provision of clinical data was less satisfactory: while 70.6% forms provided the LMP, only 8.8% of request forms gave the previous test number, 27.6% previous gynaecological symptoms and 56.8% previous history.

**Conclusion:** This study shows poorer performance in the completion of HMR101 form compared to the study conducted 10 years ago. Significant deficiencies in providing clinical information remain despite introduction of a revised HMR101 and sample taker training.

**References:**

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P1
AN ATYPICAL PRESENTATION OF AN ATYPICAL TUMOUR: A DIFFICULT CASE
J. Peaker, T. Russell and T. Hockey
Cellular Pathology, University Hospital Llandough, Penarth, Wales, UK

Abstract: FNA from subcutaneous lump received containing cells with eccentric bland nuclei and plentiful cytoplasm, of uncertain histogenesis; cytology reported as Atypical Pathology and radiology work-up gave diagnosis of A metastatic well differentiated neuroendocrine carcinoma grade 2 (atypical carcinoid). The cytological morphology differed to textbook cases.

Take Home Message:
• Difficult, relatively benign appearing tumours necessitate ICC or Histological investigation.
• Atypical presentations of tumours can be difficult to diagnose on cytological morphology alone.
• A greater proportion of aspirated material put in Cytolyt (available for ICC), rather than pre-prepared slides, can allow diagnosis on first intervention in difficult cases.

References:

P2
THE EXTRACTION OF gDNA FROM SUREPATH CERVICAL SPECIMENS USING THE HOLOGIC CONVERSION PROTOCOL
E. Allsworth
Queen Alexandra Hospital, Portsmouth, UK

Abstract: Due to the methods of fixation involved, SurePath LBC samples have proved a challenge to the manufacturers of HPV tests. In this study 200 cervical samples preserved in SurePath liquid based cytology fixative were tested using the Hologic Conversion protocol prior to HR HPV testing with the Cervista assay. This was to determine whether adequate quantities of gDNA could be reliably obtained from these samples to yield valid HPV test results.

Method: This method uses the residual enriched cell pellet post-cervical cytology testing. 0.2 ml of Hologic Conversion Solution is added to 1 ml of sample and heated to 115 °C for a period of 60 minutes. This is a proprietary solution containing a high concentration of Tris in order to promote cell lysis by increasing the osmotic effect. The mixture is then cooled, centrifuged and the supernatant aspirated prior to HR HPV testing using the Cervista assay. On completion the plates were analysed using Invader Call Reporter software to detect a red fluorescent signal to establish the quantity of gDNA present in each individual sample

Results: Of the 200 samples tested only four resulted in a low yield of gDNA. This equates to an ‘inadequate’ rate of 2% and is broadly in line with a cytology inadequate rate of 2.7% in 2010–2011.

Discussion: The Hologic Conversion protocol proved to be a reliable and robust method for extracting gDNA from SurePath fixed cervical samples. Due to the anonymising of the samples it is not possible to confirm, but it is feasible that the samples which yielded insufficient gDNA may have also have been reported as being of low cellularity cytologically. Whilst the method is simple to follow it is time consuming and would benefit from automation

Take Home Message(s):
• Reliable and robust system.
• Consistent results obtained even with operator error.
• Would benefit from automation to maintain chain of custody.

Declaration of Interest: Equipment and consumables provided by Hologic UK LTD.

P3
RETROSPECTIVE AUDIT MALIGNANT MESOTHELIOMA DIAGNOSIS IN A DISTRICT GENERAL HOSPITAL
S. Sharma†, B. Shambayati † and M. Wood‡
*Ashford and St Peters Hospitals NHS Foundation Trust, UK, †Consultant Histopathologist/Ashford and St Peters Hospitals NHS Foundation Trust, UK, ‡Consultant in Respiratory Medicine/Ashford and St Peters Hospitals NHS Foundation Trust, UK

Background: Malignant mesothelioma (MM) is a rare cancer with poor prognosis, posing a diagnostic challenge to respiratory physicians.

Aim: We audited, using BTS statement on MM published in 2007, our current diagnostic process for MM to assess the diagnostic yield of different investigative modalities.

Methods: We analysed the effectiveness of various diagnostic modalities including pleural fluid cytology, CT or ultrasound guided (USG) core and thoracoscopically guided pleural biopsy over the last 5 years.

Results: Of 55 patients diagnosed with MM since January 2007, 54 patients had confirmed cytological or histological diagnosis. Thirty-three (60%) patients had pleural fluid sent for cytology of which 17(51%) were positive for MM, 11(33%) negative, 3(9%) suspicious, 2(6%) showed a lung primary which eventually turned out to be MM and 3% inconclusive. Fifteen patients presented with pleural thickening or mass without pleural effusion. These patients were diagnosed with CT or USG biopsies. Twenty-six patients...
underwent VATS. Interestingly, the percentage of patients that have been diagnosed positively on cytology has risen year on year. PET scanning identified an appropriate biopsy site in four out of eight patients scanned.

Take home message(s):
• The progressive increase in the cytological diagnoses made in our hospital to the increasing confidence of our cytologists in recognition of cytological features and use of wider immunocytochemical panels.
• PET can be instrumental in achieving the diagnosis in difficult cases.

Reference: