Advances in FNA Cytology
The History of FNA Cytology

- 1847: FNA Described
- 1927: Dudgeon & Patrick in UK
- 1930: NY Memorial Hospital
- 1940s: Forgotten
- 1950s: Resurrected in Sweden
- 1961: BSCC formed
- 1980: Immunos
- 1990s: ROSE & Flow
- 2000s: Ancillary Tests
Good
- Easy
- Quick
- Not painful
- Few Complications
- Collect unfixed material

Bad
- Adequacy
- Hard to interpret
- Architecture lost
- Topology unseen
The Gross Appearances of FNA Specimens
A cellular smear
A necrotic cellular smear
Colloid nodule of thyroid
A pleomorphic adenoma
A lipoma
A lipoma: fat droplets lost in the methanol
An epidermoid cyst
Suture debris
Pigmented material
FNA Gross Appearances

The gross appearances of fine needle aspiration cytology samples
F G Mayall,1 A Cormack,2 K McAnulty,3 A Darlington1

ABSTRACT

Aim: This study set out to photograph and describe the gross appearances of fine needle aspiration (FNA) cytology samples, with a view to comparing these currently available images with those found in the literature. Methods: A 2-year period, a cytologically negative group of fine needle aspiration (FNA) samples was used. The samples were obtained at 8 institutions. The samples were prepared using standard equipment and techniques. The gross appearance of each sample was recorded and photographed using a Nikon Coolpix 4500 digital camera. Results: The gross appearances are described, accompanied by photographic illustrations. Conclusions: The figures illustrate and illustrate the gross appearances of FNA cytology samples of some common cytological specimens.

METHODS

The study was conducted at a laboratory in the Department of Health Sciences at the University of Canterbury. The samples were obtained from patients who had undergone an FNA procedure. The samples were prepared using standard equipment and techniques. The gross appearance of each sample was recorded and photographed using a Nikon Coolpix 4500 digital camera.

RESULTS

FNA gross material grade 3 (probably contains diagnostic material):

- The typical appearance of a cellular smear containing diagnostic material is shown in Fig. A.
- The smear is thick and pale with a consistency similar to cream. On microscopy, it has a generally granular appearance, the granules being confluent at the thin end of the smear and more dispersed at the thin end of the smear. When necrotic material is obtained the granules are less evident (Fig. B).
- Cellular material from lymphoid lesions is described below.

- Ciliated lesion or cyst (lymphoid):
- The smear is thick and pale with a consistency similar to cream. On microscopy, it has a generally granular appearance, the granules being confluent at the thin end of the smear and more dispersed at the thin end of the smear. When necrotic material is obtained the granules are less evident (Fig. B).
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- Cellular material from lymphoid lesions is described below.
FNA Gross Material Grade
Grade 1 - probably inadequate diagnostic material
Grade 2 - possibly contains diagnostic material
Grade 3 - probably contains diagnostic material
Grade 4 - material suggesting a specific diagnosis
  e.g. “Grade 4: suggests a pleomorphic adenoma”
FNA Gross Material Grade of 123 Cases:

Grade 1    9    All inadequate
Grade 2    42   All adequate
Grade 3    46   All adequate
Grade 4    26   All adequate (24 correct; 2 necrotic Ca mistaken as “pus”)

The Poor Man’s Cell Block
The Poor Man’s Cell Block

The poor man’s cell block
Frederick Mayall,1 Ann Darlington2

ABSTRACT
A simple method is described for making formalin-fixed alcohol-impregnated cell blocks from the needle aspiration cytology specimen that we refer to as “The Poor Man’s Cell Block.”

The utility of fine needle aspiration cytology can be enhanced by the collection of cell blocks for immunohistochemistry and other molecular studies. We describe a method for making formalin-fixed cell blocks that we have developed over the last 30 years. This technique, which we refer to as “The Poor Man’s Cell Block,” requires no equipment or reagents that are not available in an outpatient department or a pathology department. It has developed from a method that we first described in 2001. The material is aspirated from the fine needle aspiration needle and is placed into a formalin-filled tube. The tube is then placed in a formalin-filled bottle. The specimen is then capped and sent to the laboratory. Once the specimen is received, it is placed in a formalin-fixed bottle. The specimen is then capped and sent to the laboratory. These techniques are simple and require minimal equipment.

The sections show a higher quality of cells in the sections than gel block methods.

Figure 1: Images demonstrating the steps in the preparation of a formalin-fixed cell block. (A) The fine needle aspiration material is expelled into the bottle. (B) The bottle is then inverted to expel the material into the bottle. (C) The bottle is then inverted to expel the material into the bottle. (D) The bottle is then inverted to expel the material into the bottle. (E) The bottle is then inverted to expel the material into the bottle. (F) The bottle is then inverted to expel the material into the bottle. (G) The bottle is then inverted to expel the material into the bottle. (H) The bottle is then inverted to expel the material into the bottle.

REFERENCE
Gelatin Foam Cell Blocks
Gelatin Foam Cell Blocks

Short report

Gelatin foam cell blocks made from cytology fluid specimens

Frederick G Mayall, Ian Wood

ABSTRACT

This report describes a simple method of preparing cell blocks from fluid submitted for cytology, using strips of gelatin foam surgical dressing material.

Immunohistochemistry is an important aid in the diagnosis of serous fluid cytology specimens. However, conventional methods for the preparation of cytology cell block specimens from serous fluids, such as agar blocks, HistoCel (Thermo Scientific, Loughborough, UK) and a multitude of other methods, can be time consuming and technically difficult. We have developed a simple method that requires no special reagents or equipment other than a cone of gelatin foam, such as Gelipore (Fisher, New York, USA), of the type that is used for wound dressings. This organic foam is highly absorbent and, being organic, is compatible with conventional histology tissue processing. The method is depicted in figure 1. First, the serous fluid is centrifuged and the supernatant is removed by pipette to leave a deposit of cells at the base of the universal container. A cone of gelatin foam,

Figure 1 (A) Residual cytology fluid sample after material has been taken for interim preparation. (B) The sample is centrifuged and the supernatant is removed. (C) Small blocks of gelatin foam are cut from a sheet of dressing material. (D) Foam blocks the fluid to form a solid block. (E) The solid cell block is wrapped in tissue paper for processing. (F) High-power H&E detail, together with (G) high-power CDKN2B staining showing Ki67 immunostaining of lung adenocarcinoma cells.

J Clin Pathol 2011;64:818e819. doi:10.1136/jcp.2010.088542
PVA Cell Blocks
PVA Cell Blocks
An FNA cytology foam core device for making cell blocks

**SHORT REPORT**

Cell block preparation is commonly used in histopathology laboratories to create tissue samples for diagnostic and other purposes. Various methods have been described for the preparation of cell blocks using FNA needles. The method described here uses a foam core device to ensure that the sample is well-distributed in the cell block and that the tissue sample is well-preserved for further analysis.

1. **Introduction**
   - Cell block preparation is a crucial step in the histopathological examination of tissues.
   - The method described here uses a foam core device to ensure that the sample is well-distributed in the cell block and that the tissue sample is well-preserved for further analysis.

2. **Materials and Methods**
   - The foam core device is designed to collect cell samples using a FNA needle.
   - The foam core device is placed into the needle, and the needle is inserted into the tissue sample.
   - The sample is then aspirated into the foam core device, and the needle is removed.
   - The foam core device is then removed from the needle, and the sample is collected into a slide or container.

3. **Results**
   - The method described here results in well-preserved samples with good tissue distribution.
   - The foam core device is easy to use and can be adapted to different types of needles.

4. **Discussion**
   - The method described here is simple and effective for the preparation of cell blocks from FNA samples.
   - The foam core device can be used in conjunction with other methods for tissue preparation.

5. **Conclusion**
   - The foam core device is a useful tool for the preparation of cell blocks from FNA samples.
   - Further studies are needed to evaluate the effectiveness of this method in different clinical settings.

**Figure 1**

- (A) The foam core device is placed into the needle, and the needle is inserted into the tissue sample.
- (B) The sample is aspirated into the foam core device.
- (C) The foam core device is removed from the needle, and the sample is collected into a slide or container.

**Take-home messages**

- Fine needle aspiration samples and cell blocks can be collected simultaneously using a foam core device.
- This method results in well-preserved samples with good tissue distribution.
- The foam core device is easy to use and can be adapted to different types of needles.

**Acknowledgments**

The authors would like to thank the staff at the Department of Pathology for their assistance in the preparation of this manuscript.

**References**


**Funding**

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LabCentre

Laboratory Management Information

Patient History Enquiry

1. Dept: HI Histopathology
2. Pat No.: [Redacted]
3. Spm No.: [Redacted]

Status "DP"
GAB
Specimen:
Gastric.
Clinical History:
Known gastric Malignoma. ? has healed. ? still active.
REPORT
Macro:
Five biopsies, together 8mm.
Micro:
The specimen consists of fragments of non specialized

Move the pointer to a request and enter "R" to view the report.
What do we want?
Pro-forma reporting
User defined templates

Report text:
An ellipse of skin * x * x mm.
The surface shows *.

Testicular Tumour

CURRENT PROFOMA: NONE YET

Templates
FM-Lipoma
Lobulated adipose tissue consistent with tissue

Hyperplastic polyp
These are hyperplastic polyps. There is no

LIW - endometrial pipelle
These are fragments of functional endometrium

LIW Barrett
These are fragments of glandular mucosa with

LIW BCC exocision
This is sun-damaged skin bearing ... basal cell

LIW cervical biopsy TZ
This biopsy is from the transformation zone of

LIW normal endometrium
These are fragments of functional endometrium

LIW normal small intestine
These are fragments of histologically normal

To insert template text into a Report Text field that already contains text first
type >> at the insertion point

Replacing * with text:
a nodular lesion
a region of discoloration
“One-click” extra-work
Visual process control
Exportable data-sets
Process supported by software design

- Enter demographics
- Complete breast proforma
- Software generates report
- Edit report & authorise report
- PDF report generated
- Breast screening data form
Easy enhancement
NHS Improvement now closed

NHS Improving Quality (NHS IQ) now exists to bring together the wealth of knowledge, expertise and experience of a number of former NHS improvement organisations.

NHS IQ is hosted by NHS England, previously known as the NHS Commissioning Board.

As a consequence, NHS Improvement has now closed. However, elements of the following programmes will continue within NHS Improving Quality:

- Children and young people cancer survivorship
- Endoscopy
- Enhanced recovery
- Interventional radiology
- Seven day services

The work on these parts of our website form part of the work to continue within NHS IQ and therefore will be updated going forward.

Website, materials and publications

Access to this website and the resources on it will be available for a limited time. Please access and retain the materials you require. We will signpost on this site as soon as we can where our publications and resources can be accessed in the future.

Find out more

For more information, please visit the NHS Improving Quality website

Or download NHS Improving Quality: Our Strategic Intent

Contact: enquiries@nhsiq.nhs.uk
The Free Diagnostic Pathology Software Project

Try the Free D Path V4.1 software online straight away by clicking this link. Please do not enter any real patient data.

Username: path
Password: path

To download the software to use on your own PC, Mac, or server click this link. There are instructions for installing and using the software below.

The Free Diagnostic Pathology Software Project arose from the...
Open-source cancer diagnosis

The Free Diagnostic Pathology Software Project uses the open source principle to give doctors access to improved cancer testing workflows

Posted by Pete Swabey on 11 April 2013

The open source model is not just a way to share free code. Good software encapsulates expertise and experience, allowing the user to perform some action better than they could before. An open source software project can, therefore, be a way to share and build knowledge.

The Free Diagnostic Pathology Software Project is proof of this principle. The project offers free access to improved workflows and reporting practices for analysing cancer cells, developed by the NHS, through an open licence.

That could lead to a measurable improvement in the cost and effectiveness of cancer diagnosis, all around the world.
Pathologist creates open source software

9 August 2013  Lis Evenstad

A pathologist at Taunton and Somerset NHS Trust has created open source, web-based pathology reporting software.

Dr Fred Mayall, a consultant histopathologist at the trust, got involved in the Free Diagnostic Pathology Software Project after being frustrated that the existing IT in the NHS was not up to scratch.

Cancer laboratory reporting software often lacks the technology medical staff need to accurately report complex cases, said Dr Mayall.

Taunton and Somerset was a pilot site for an NHS Improvement project to improve the delivery of pathology services, but the team found that the systems were not doing what they wanted.
FileMaker ajuda a reduzir o tempo para diagnosticar câncer

Publicada em 2 de janeiro de 2013 por Criação

O Projeto Software Livre de Diagnóstico de Patologia surgiu como parte de uma iniciativa do Departamento de Saúde para melhorar o NHS através do uso de uma nova tecnologia. Muitos laboratórios de câncer do Reino Unido estão usando software de relatórios antigo. A atualização para um sistema mais moderno é cara. Mesmo os sistemas mais modernos muitas vezes não têm a tecnologia necessária para os patologistas denunciarem casos complexos de forma eficiente.

Quando implementaram os Princípios Lean no laboratório, tornou-se evidente que o atual sistema de TI não poderia apoiar as mudanças necessárias. Uma abordagem mais visual e aerodinâmica foi requerida na forma de modelos de relatórios personalizáveis e pró-formas para capturar os conjuntos de dados completos para cada caso. Para superar essas dificuldades o Projeto Software Livre de Diagnóstico de Patologia desenvolveu o seu próprio software de relatórios.

Usabilidade e flexibilidade foram os elementos-chave que a equipe precisava na sua solução. Ao usar o FileMaker foi possível atualizar o software sem desligá-lo e interromper o trabalho. Isto permitiu que a equipe médica fosse capaz de mudar o software em pequenos passos, minimizando a possibilidade de quebra.
482 Tried the software online
473 Downloaded the software
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<th>SNOMED T</th>
<th>Colon TS8000</th>
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<td>SNOMED P</td>
<td>Mucinous adenocarcinoma MB4803</td>
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**Pharynx**

- Breast Tumour
- Renal Tumour
- FNA
- Testicular Tumour

**CURRENT PROFOMA: COLORECTAL CARCINOMA**

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**MAKE TEMPLATE**