1. INTRODUCTION

Cytology is a discipline that involves the morphologic study of cells. It is broadly divided into exfoliative cytology and aspiration cytology.

Exfoliative cytology involves examination of specimens that contain cells exfoliated from body cavities and surface. It is further subdivided into gynaecological cytology (Pap/cervical smears) and non-gynaecological cytology (pleural fluid, peritoneal fluid, cerebrospinal fluid, urine, sputum, brushing, etc).

Aspiration cytology involves examination of cells that are actively obtained by fine needle aspiration.

2. LIST OF SERVICE

2.1 Exfoliative Cytology

2.1.1 Gynaecological Cytology:

- Conventional Pap smear
- Fluid-based Pap smear

2.1.2 Non gynaecological Cytology e.g body fluids, CSF, urine, sputum, brushing, etc.

2.2 Aspiration Cytology

2.2.1 Fine Needle Aspiration Cytology

3. SERVICE HOURS

Monday – Friday: 7.30 am – 5.30 pm.
4. **REQUEST FORM**

4.1 PER – PAT 301 - form for routine cytological examination. If urgent result is required, please indicate so by marking “URGENT” over the upper right hand corner of the form.

4.2 PS 1/98 (Pindaan 2007) - form for gynaecological cytology examination

4.3 All request form should be filled legibly, complete with relevant clinical history and findings.

4.4 The clinician should have his/her name and contact number clearly written on the request form.

5. **SPECIMEN COLLECTION**

5.1 **Gynaecological Cytology**

5.1.1 Conventional

a) Label a clean glass slide with patient’s name and IC number with pencil on the frosted end.

b) DO NOT use lubricant on the speculum.

c) Place cervical spatula at the external os and rotate through 360° degrees, lightly scraping the squamo – columnar junction.

d) Smear the material onto the labeled glass slide about as thick as a blood film.

e) Fix the slide immediately, either by immersing it in a coplin jar containing 95% alcohol for at least 30 minutes or use a spray fixative.

f) Air-dry the fixed slide.

g) Place the slide in a slide mailer and despatch to the cytology laboratory.

5.1.2 Fluid-based

a) Label the vial with patient’s name and IC number.

b) DO NOT use lubricant on the speculum.

c) Obtain an adequate sample from the cervix using a broom-like device. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in clockwise direction five times.

d) Rinse the broom into the vial containing the fixative solution by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart. As a final step, swirl the broom vigorously to further release material. Discard the collection device.

e) Tighten the cap and send the vial to the cytology laboratory.
5.2 Sputum
(Specimen must be collected on three consecutive days)

5.2.1 Instruct the patient to empty the mouth of all saliva immediately after he wakes up in the morning.

5.2.2 The patient should then cough deeply and collect the resulting sputum in the container supplied.

5.2.3 The specimen must be sent immediately to the cytology laboratory.

5.2.4 DO NOT forget to collect a similar specimen on the next two days.

5.2.5 The specimen container should be labeled according to the day the specimen is collected.

5.2.6 For sputum specimen submitted as smears;
   a) Label two clean glass slides for each patient with name and IC number.
   b) Prepare smears as thick as blood film and immediately place the slides in 95% alcohol for at least 30 minutes or use spray fixative.
   c) Air-dry the smears.
   d) Ensure the slides are not placed face to face in the slide mailer.

5.3 Urine

5.3.1 The patient should void and discard the first morning urine specimen.

5.3.2 Collect the next voided urine and send immediately to the cytology laboratory.

5.4 Body fluid
(Pleural fluid, peritoneal fluid, pericardial fluid, CSF, etc.)

5.4.1 Specimens are collected in clean containers and despatched immediately to the cytology laboratory.

5.5 Brushing
(Bronchial brushing, CBD brushing, etc.)

5.5.1 Label one to three clean glass slides with patient’s name and IC number.

5.5.2 Smear the material about as thick as a blood film.
5.5.3 Immediately place the slides in 95% alcohol for at least 30 minutes or use spray fixative.

5.5.4 Air-dry the smears.

5.5.5 If more than one slide is to be placed in the same slide mailer, ensure that they are not placed face to face.

5.6 **Fine Needle Aspiration Cytology (FNAC)**

5.6.1 **Appointment**

a) The FNAC clinic is conducted twice a week at the Surgical Outpatient Department (SOPD), HKL for palpable lesions on appointment basis.

i) Tuesday (2.00pm-4.00pm): Breast cases (Appointment given by SOPD Clinic)

ii) Thursday (09.00am-12.00pm): Non breast cases (Appointment given by Cytology Lab)

b) FNAC for deep-seated lesions is conducted at Diagnostic & Imaging Department (Angiography and CT scan) and Gastroenterology Unit (Endoscopic) by the respective Clinicians.

5.6.2 **Request and consent**

a) FNAC should only be requested by specialists.

b) The request form should be filled legibly, complete with the relevant clinical history and findings. Whenever there is more than one lump or swelling present, the clinician should indicate which lump/s or swelling/s to be aspirated.

c) A signed consent from the patient should be obtained.

5.6.3 **Urgent FNAC**

Any request for urgent FNAC, please contact the pathologist on FNA call.

5.6.4 **Please note:**

a) Breast and thyroid cyst may be aspirated by the surgeon or physician and material sent for cytology examination.

b) There is no real indication for FNAC in multinodular goiter or diffuse goiter.
c) Vascular lesions or those of vascular origin are not suitable for FNAC.
d) FNAC for deep seated lesions are performed by radiologist under radiological guidance on appointment basis.

6. GUIDELINES FOR COLLECTION AND TRANSPORTATION OF CYTOLOGY SPECIMEN

<table>
<thead>
<tr>
<th>NO</th>
<th>SITE / TYPE</th>
<th>CONTAINER</th>
<th>VOLUME/ QUANTITY</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bronchial brushing</td>
<td>Smear in coplin jar with 95% alcohol</td>
<td>1 – 3 Smears</td>
<td>Wet fix immediately in 95% alcohol</td>
</tr>
<tr>
<td>2</td>
<td>Bronchial washing</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C</td>
</tr>
<tr>
<td>3</td>
<td>Bronchial alveolar lavage</td>
<td>Sterile container</td>
<td>As collected</td>
<td>Despatch immediately to laboratory for processing. If delay anticipated refrigerate specimen at 2°C - 8°C</td>
</tr>
<tr>
<td>4</td>
<td>Cervical Vaginal (PAP) smear</td>
<td>a) Fixed smear</td>
<td>a) 1 smear</td>
<td>Wet fix immediately in 95% alcohol or spray fix</td>
</tr>
<tr>
<td></td>
<td>a) Conventional</td>
<td>b) Fluid-based</td>
<td>b) Supplied vial with fixative.</td>
<td>Despatch immediately to laboratory for processing</td>
</tr>
<tr>
<td>5</td>
<td>Cerebrospinal fluid</td>
<td>Sterile bijou bottle/collecting tube</td>
<td>As collected</td>
<td>Despatch immediately to laboratory for processing</td>
</tr>
<tr>
<td>6</td>
<td>Cyst fluid</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
</tr>
<tr>
<td>7</td>
<td>Eye fluids/ Eye washing</td>
<td>In sterile collecting tube</td>
<td>As Collected</td>
<td>Despatch immediately to laboratory for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
</tr>
<tr>
<td></td>
<td>Procedure</td>
<td>Container Type</td>
<td>Specimen Handling</td>
<td>Additional Instructions</td>
</tr>
<tr>
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<tr>
<td>8</td>
<td>Fine Needle Aspiration of all organ</td>
<td>a. Wet fix smear in coplin jar with 95% alcohol</td>
<td>As collected</td>
<td>Wet fix immediately in 95% alcohol or spray fixative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Air dried smears</td>
<td>As collected</td>
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<tr>
<td></td>
<td></td>
<td>c. Specimen for cell block in cyto spin fluid</td>
<td>As collected</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Oesophageal washing</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately to laboratory for processing</td>
</tr>
<tr>
<td>10</td>
<td>Oesophageal brushing</td>
<td>Smears in coplin jar with 95% alcohol</td>
<td>As collected</td>
<td>Wet fix immediately in 95% alcohol or spray fixative.</td>
</tr>
<tr>
<td>11</td>
<td>Pericardial fluid</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
</tr>
<tr>
<td>12</td>
<td>Pleural fluid</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
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<tr>
<td>13</td>
<td>Peritoneal fluid</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
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<tr>
<td>14</td>
<td>Sputum</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
</tr>
<tr>
<td>15</td>
<td>Urine</td>
<td>Sterile specimen container</td>
<td>As collected</td>
<td>Despatch immediately for processing. If delay anticipated refrigerate specimen at 2°C - 8°C.</td>
</tr>
</tbody>
</table>
7. DESPATCH OF SPECIMEN

Specimen for cytological examination should be sent directly to the cytology laboratory reception counter for immediate processing.

8. COLLECTION OF REPORTS

All printed reports should be collected by respective clinic/ward/department from the cytology laboratory or from the common pigeon hole of the Department.

9. SERVICE AFTER OFFICE HOUR

9.1 No specimen for cytological examination is processed after office hour.

9.2 Specimen collected outside officer hours should be refrigerated at 2°C - 8°C before despatched to the cytology laboratory the next day. Refrigeration helps preserving the cell.

9.3 DO NOT FREEZE SPECIMEN

10. CONTACT NUMBERS

<table>
<thead>
<tr>
<th>Location</th>
<th>Direct line</th>
<th>Ext</th>
</tr>
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<tbody>
<tr>
<td>Cytology Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head of Unit and Consultant Pathologist</td>
<td>0326155623</td>
<td>5623</td>
</tr>
<tr>
<td>Datin Dr. Fauziah Kassim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Officers</td>
<td>0326155620</td>
<td>5620</td>
</tr>
<tr>
<td>Senior Medical Lab Technologist</td>
<td>0326155626</td>
<td>5626</td>
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<tr>
<td>Result tracing</td>
<td>-</td>
<td>5599</td>
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<tr>
<td>Specimen reception counter</td>
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<td>6495</td>
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