Contents

The 8th Taiwan・Japan・Korea Cytotechnology Joint Meeting
The Preliminary Program

Place : Lotung Poh-Ai Hospital
Date : 18 February, 2017 (Saturday) 9:00～16:15

Time	Topic	Speaker	Moderator
09:00-09:30	Registration		
09:30-09:45	Opening Address	**Chin-Te Lu/** The Vice Superintendent of Lotung Poh-Ai Hospital, Lo-Hsu Foundation **Hitoshi Itoh /** The President of the Japanese Society of Cytotechnologists **Sooil Jee /** The President of the Korean Association of Cytotechnologists **Jen-Sheng Ko /** The International Committee of the Taiwan Society of Clinical Cytology	
09:45-10:00	A case report of breast cancer with axillary and neck lymph nodes metastases?	I-Ping Chen / Taiwan	Taiwan
10:00-10:15	The cytological study of the CK14-positive cells and p63-positive myoepithelial cells in the cell clusters of intraductal proliferative lesion of the breast	Nobuyoshi Terado / Japan	
10:15-10:30	Atypical adenoma of thyroid gland cytologically mimicking papillary carcinoma: A case report	Ryo HAYASHIDA / Japan	
10:30-10:50	A Case Report of Salivary Gland	Tae-Keun Kim / Korea	
10:50-11:20	Coffee Break		
11:20-11:35	Type 2 papillary renal cell carcinoma invasion of the renal pelvis by pelvic irrigation cytology	Yuichi Kinoshita/ Japan	Korea
11:35-11:50	Vegetable cells mimicking parasite ova in the ileal conduit specimen: a case report	Ping-Fung Chung / Taiwan	
11:50-12:10	Uterine Clear Cell Adenocarcinoma of Postmenopausal Women : A Case Report	Jungsook Cho(CTIAC) / Korea	
12:10-13:30	Lunch		

13:30-13:50	Case Study of Pseudomyxoma Peritonei	Young-Jae OH / Korea	Japan
13:50-14:05	A rare case of malignant peritoneal mesothelioma with monosomy 9	Kazuki NAKASHIMA	
14:05-14:20	Difference in Cytological Findings of Pancreatic Adenocarcinoma Depending on Sampling Technique	H. Sakai, CT,IAC / Japan	
14:20-14:35	A case report of pancreas FNA	Mei-Ling Wu / Taiwan	
14:35-14:55	Coffee Break		
14:55-15:10	Morphological changes in Doxorubicin resistant small cell carcinoma	Seiya KITAZONO / Japan	Taiwan
15:10-15:25	The Effects of Formalin Fixing Conditions on Fluorescence in situ hybridization in cell block of effusion cytology	Shinji MATSUMOTO / Japan	
15:25-15:40	Comparison of three different cell block preparations using malignant body fluid specimens	Bao-Rung Zeng / Taiwan	
15:40-15:55	Usefulness of liquid-based cytology for the diagnosis of oral squamous cell carcinoma — Comparison of conventional method and liquid-based cytology	Daisuke KAWASHIMA / Japan	
15:55-16:15	Closing address	**Jen-Sheng Ko** / Taiwan	

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Affiliation	Name
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Keimyung University Dongsan Medical Center	SINAM KIM
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Korea CFC	NOWON PARK
Korea Cancer Center Hospital	HWAJEONG HA
National Health Insurance Service Ilsan Hospital	SOOIL JEE
Seegene Medical Foundation	EUNGJOON LEE
Chosun University Hospital	YOUNG-MUK CHOI
Gwangju Veterans Hospital	MINSIK NA
Dankook University Hospital	SUK JIN YOON
Cheil General Hospital	JUNGSOOK CHO
Hanyang University Guri Hospital	TAE-KEUN KIM
Gangnam Severance Hospital	CHUL KIM
National Cancer Center	YONG CHUL KIM
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国家公務員共済組合連合会立川病院	SASAI SHINYA

Breast cancer with axillary and neck lymph nodes metastases? A case report of misdiagnosis?

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1. Department of Pathology, Lo-Tung Poh-Ai Hospital
2. Department of General Surgery, Lo-Tung Poh-Ai Hospital

Clinical history:

A 46-year-old woman presented to the General surgery OPD (Out Patients Department) of Lo-Tung Poh-Ai Hospital with the chief complaint of left breast mass noted for more than one year. Skin oozing was noted in the recent one month. On physical examination, left breast mass was noted and measured about 8.0 x 7.5 x 6.2 cm. Eczematous change of skin was also noted. Core needle biopsy was performed and proved to be invasive ductal carcinoma. For clinical tumor staging, whole body CT scan was performed and showed left breast mass, left axillary and mediastinal and bilateral neck lymph nodes metastases, right pleural and lung metastases, and right iliac bone metastasis. Fine needle aspiration smears from the axillary and neck lymph nodes were done. Metastatic ductal carcinoma of breast was diagnosed by cytotechnologist. When reviewing the aspiration smears, the pathologist found that the neck lymph node aspiration smears were not like metastatic ductal carcinoma of breast, and most like metastatic papillary carcinoma of thyroid. Thyroid survey was recommended and tumor masses were noted in both right and left thyroids. Left thyroid aspiration smear was performed and proved to be papillary carcinoma.

Discussion:

Is there is a connection between thyroid cancer and breast cancer ? The answer is " yes " . A thyroid cancer was 1.18 times more likely to develop breast cancer than one with no history of thyroid cancer. A breast cancer was 1.55 times more likely to develop thyroid cancer than a woman with no history of breast cancer. The researchers found that those patients who had been previously treated and survived thyroid cancer had a slightly higher risk of developing another cancer within the first 10 years. After 10 years, the risk was not higher. In women, the most common second cancer is breast cancer.

Thyroid hormone has estrogen-like effects. The research suggests that thyroid hormone has a direct and crucial role in the development of breast cancer. Woman with an overactive thyroid had a slightly increased risk of breast cancer — an 11% higher risk. Woman with an underactive thyroid had a 6% drop in their breast cancer risk. Among the patients with thyroid cancer patients, 4.3% will developed a subsequent breast cancer during a 5-year median follow-up period. Among the patients with breast cancer, 2.6% will developed a subsequent thyroid cancer during a 6.2-year

follow-up period. The expression of both estrogen and progesterone receptors were significantly higher in first primary breast cancer patients who developed thyroid cancer than in a breast cancer group who did not develop thyroid cancer. Analysis by histologic type revealed that the highest risk of second primary breast cancer was found among patients with follicular thyroid cancer. Women under age 40 with follicular carcinoma had a 10-fold risk of developing breast cancer. Breast cancer survivors who then developed thyroid cancer were older on average than those with only thyroid cancer: 62 versus 45 years, respectively. Breast cancer survivors should have "vigilant screening" for thyroid cancer in the first five years after their diagnosis. Thyroid cancer survivors should have "vigilant screening" for breast cancer in the first five years after their diagnosis.

Conclusion:

Higher breast cancer risk in thyroid cancer patients (1.55 times), and vice versa (1.18 times). The connection between breast cancer and thyroid cancer is another risk factor that a doctor and a patient should be aware of. Cytotechnologists need to be more aware of the link between the two cancers.

The cytological study of the CK14-positive cells and p63-positive myoepithelial cells in the cell clusters of intraductal proliferative lesion of the breast

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[1]Division of Diagnostic Pathology, Kyushu University Hospital
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【Abstract】

Objective

We studied a usefulness of the Immunostaining using the CK14/p63 cocktail antibody against intraductal proliferative lesion of the breast which diagnosis is indeterminate by cytology.

Study Design

The material consisted of 31 cases of breast lesions including 12 benign cases and 19 malignant cases. These had been diagnosed by histology in Kyushu University Hospital Department of pathology.
These cases were immunostained by CK14/p63 cocktail antibody, and stainability and the distribution of the cell cluster were examined.

Result

In a case of the benign lesion, 4 cases out of 12 showed more than 60% of CK14 positive cells. 8 cases out of 12 showed more than 6 p63-positive myoepithelial cells / ten thousand μm^2.
In a case of the malignant lesion, all of 19 cases were less than 30% of CK14 positive cells, less than 1.7 p63-positive myoepithelial cells / ten thousand μm^2 of the lesion - the incidence of the number of p63-positive myoepithelial cells was low.

Conclusion

The immunostaining using the CK14/p63 cocktail antibody is useful in the differentiation between the benign lesion and the malignant lesion. However, observation of the cytological findings is important as well as immunostaining for the differential diagnosis.

【Key words】

breast cytology, intraductal prolifereative lesion, cell clusters, dobule immunostaining, p63, myoepithelial cell , CK14 positive cell, mosaic

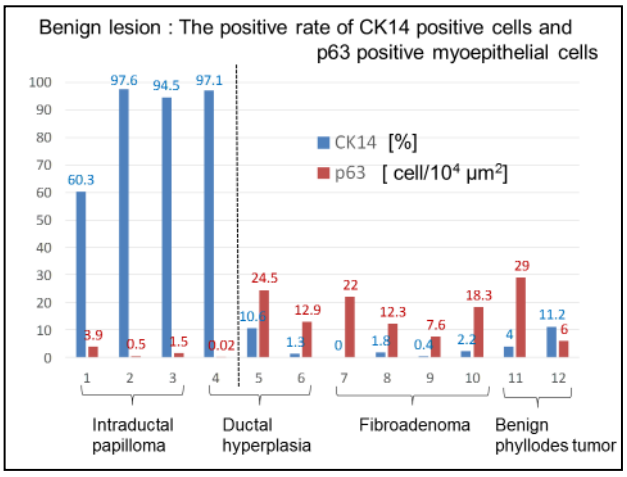

Figure 1. Benign lesion
The positive rate of CK14 positive cells and p63 positive myoepithelial cells.

【Result】
The result of Benign lesion 12 cases

CK14positive cell	≧60%
Intraductal papilloma	3
Ductal hyperplasia	1
Total	4

p63positive myoepithelial cell	≧6cells/10^4μm^2
Fibroadenoma	4
Benign phyllodes tumor	2
Ductal hyperplasia	2
Total	8

Figure 2. The result of Benign lesion 12 cases

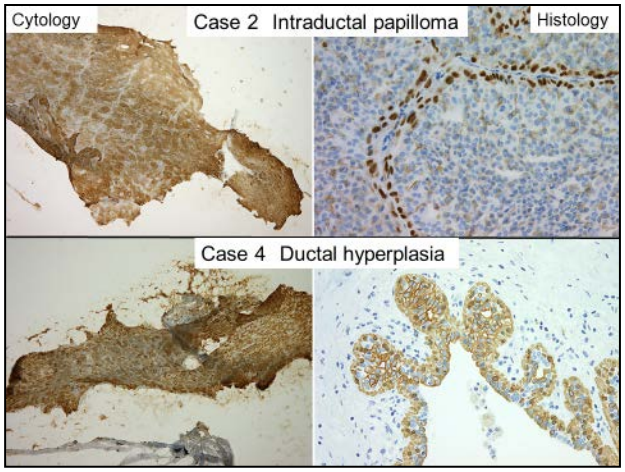

Figure 3. CK14 positive cell : Mosaic pattern
Case 2. Intraductal papilloma(97.6%)
Case 4. Ductal hyperplasia(97.1%)

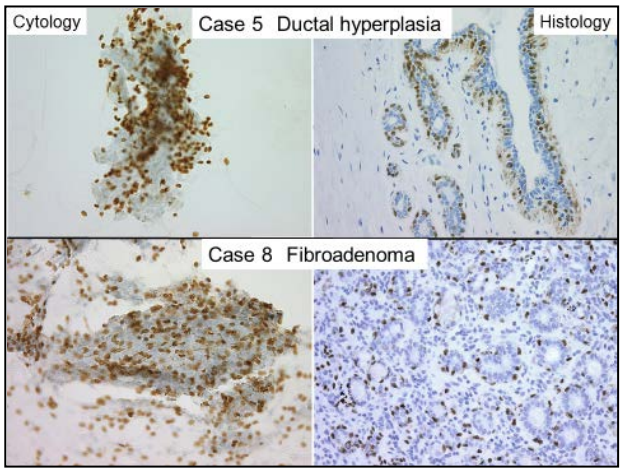

Figure 4. p63 positive myoepithelial cell
Case 5. Ductal hyperplasia(24.5 cells/ 10^4μm^2)
Case 8. Fibroadenoma(12.3 cells/ 10^4μm^2)

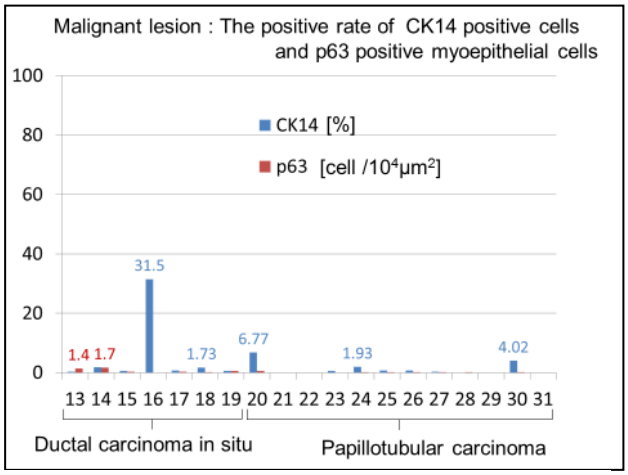

Figure 5. Malignant lesion
The positive rate of CK14 positive cells and p63 positive myoepithelial cells.

【Result】
The result of Malignant lesion 19 cases

CK14 positive cell	≦31. 5%
p63 positive myoepithelial cell	≦1. 7cells/10^4μm^2

Ductal carcinoma in situ	8
Papillotubular carcinoma	11
Total	19

Figure 6. The result of Malignant lesion 19 cases

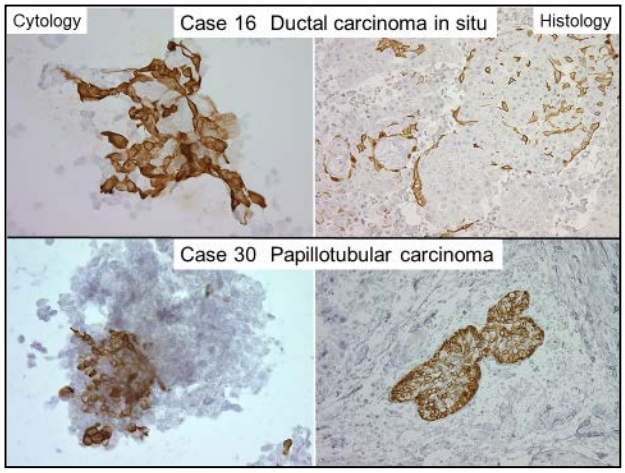

Figure 7. CK14 focal positive(Malignant lesion)
Case 16. Ductal carcinoma(31.5%)
Case 30. Papillotubular carcinoma(4.02%)

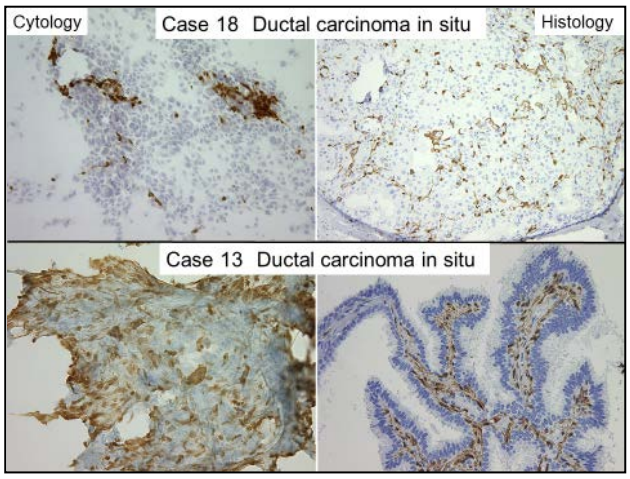

Figure 8. Malignant lesion
Case 18. Ductal carcinoma in situ A few p63 positive myoepithelial cells. (0.22 cells/ $10^4\mu m^2$)
Case 13. Papillotubular carcinoma
Malignant lesion mixed with papillomatosis of benign lesion.

【 Result 】

CK14 p63	≧60% or ≧6 cells/$10^4\mu m^2$	＜60% and ＜6 cells/$10^4\mu m^2$
Benign lesion	12	0
Malignant lesion	0	19

Figure 9. Result of Benign lesion and Malignant lesion

Atypical adenoma of thyroid gland cytologically mimicking papillary carcinoma: A case report

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(2) Department of Medical Technology, Kumamoto Health Science University

Background

Atypical adenoma of thyroid is a variant of follicular adenoma and shows strong structural and cellular atypia. We present a case of atypical adenoma we suspected of papillary carcinoma in pre-operative cytology.

Case

78-year-old, male. Ultrasonography revealed a solid mass 2 cm in diameter in right lobe of thyroid gland. Fine needle aspiration cytology (FNAC) was performed and showed a small number of atypical cells appearing to be isolated or forming small follicular cluster. They were almost naked and their nuclei showed anisonucleosis, cleaved shape, groove and intranuclear cytoplasmic inclusion bodies. And eosinophilic nucleoli were observed (Fig.1). With the cytological findings, we made a diagnosis of “suspicious of papillary carcinoma”. In consideration of cytological diagnosis, resection of right lobe of thyroid gland was performed. Histologically, the tumor 1.5 cm in diameter was encapsulated and showed micro-follicular structure and solid proliferation of atypical cells showing irregular shaped nuclei varied in size, nuclear grooves and intranuclear cytoplasmic inclusion bodies (Fig.2). But neither capsular invasion nor vascular invasion was found. Immunohistochemically, tumor cells were positive for thyroglobulin and TTF-1, and negative for CK19, HBME-1, calcitonin and p53, and Ki-67 labeling index was less than 1%, then the pathological diagnosis was made as atypical adenoma.

Conclusion

This case was very difficult to make cytological diagnosis on the ground of poor cellularity and severe cellular atypia mimicking papillary carcinoma. Therefore we should keep this important experience of atypical adenoma in our mind and consider the possibility of atypical adenoma when we suspect of papillary carcinoma on the ground of such cellular atypia as nuclear groove and intranuclear cytoplasmic inclusion body.

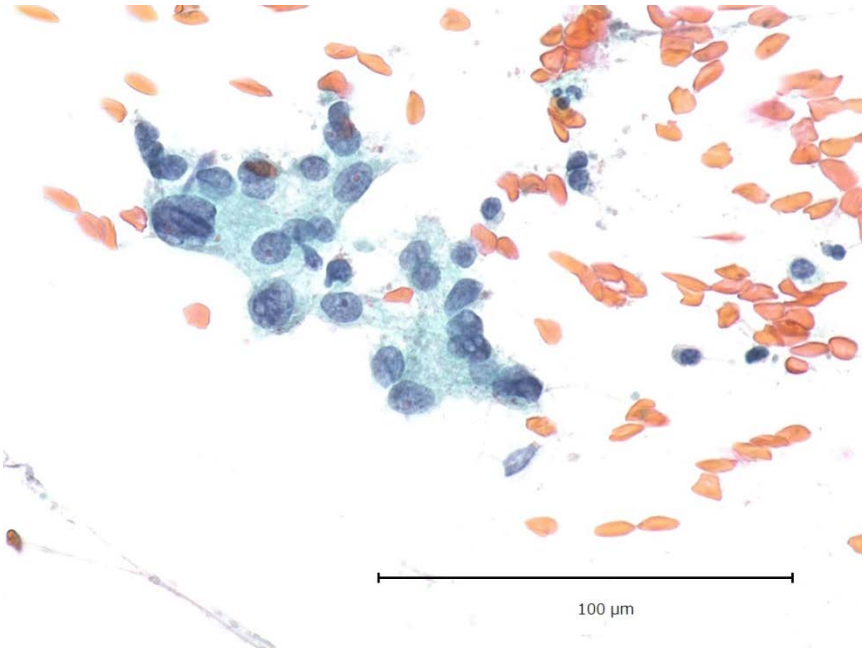

Figure 1. Papanicolaou stain (x40)

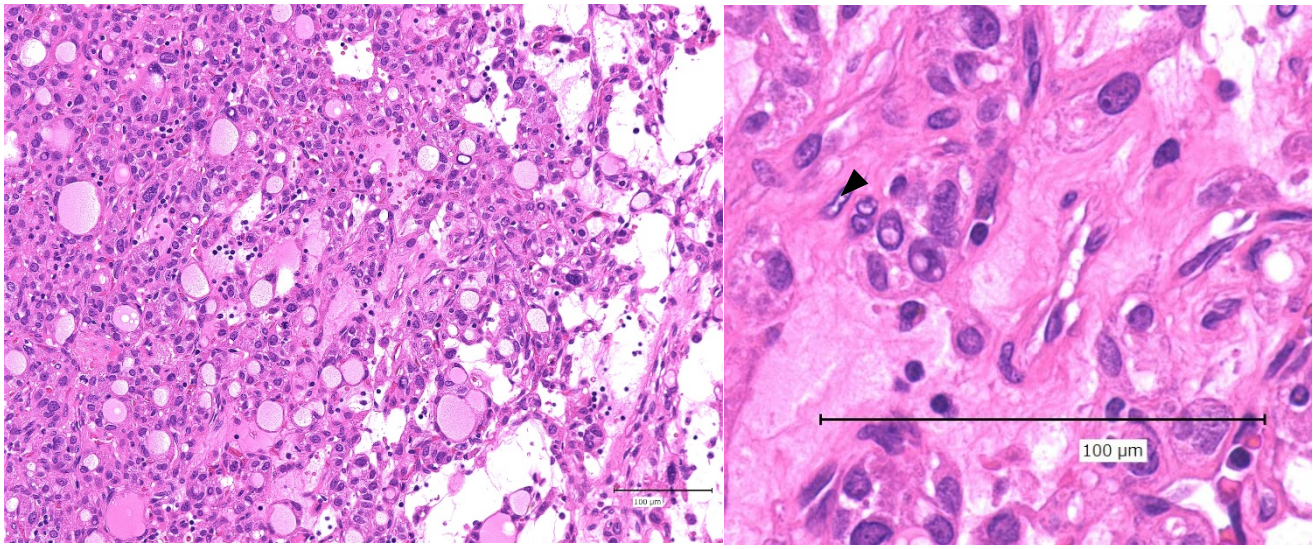

Figure 2. HE stain (a x20, b x40)

(a) Micro follicular structure was shown.

(b) Intranuclear cytoplasmic inclusion bodies(▼)

CASE report
(Salivary tumor)

Hanyang university Guri Hospital
Tae-Keun Kim

History

- 80-year-old female presented to our hospital to neck mass being found 9 months ago.
- CT scans showed 4.4cm sized ill-defined mass in parotid gland
- Heterogeneously enhancement and multiple necrotic portion
- FNABC
- Parotidectomy

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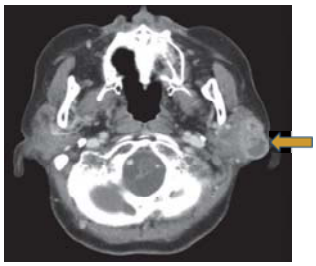
CT(computed tomography)



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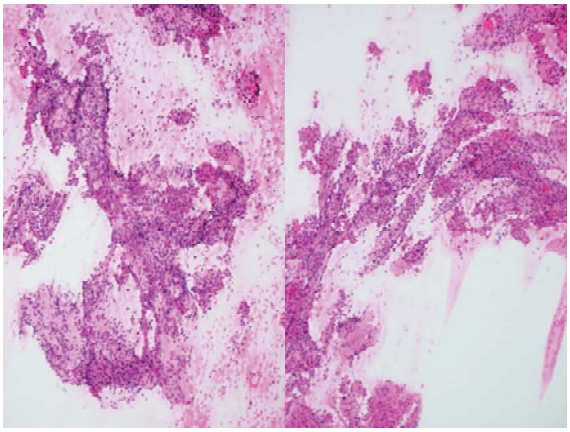

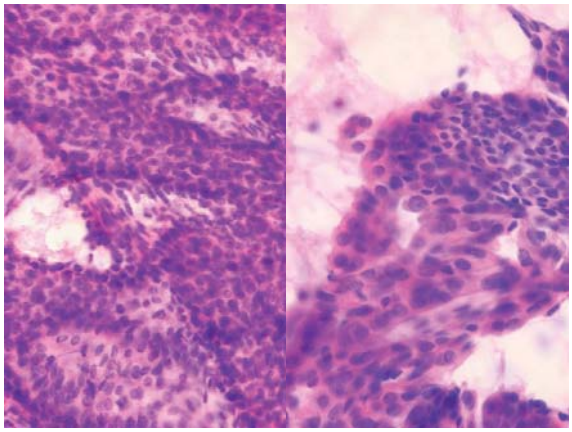

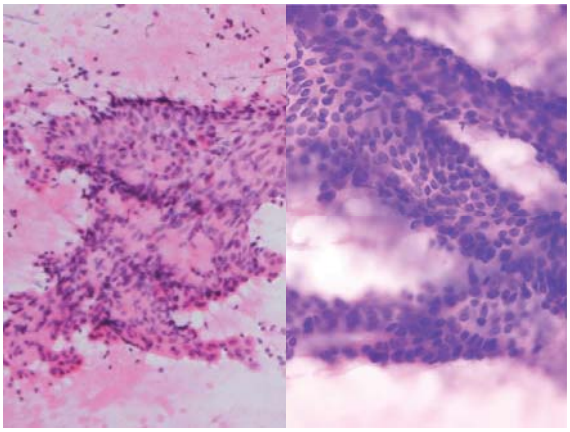

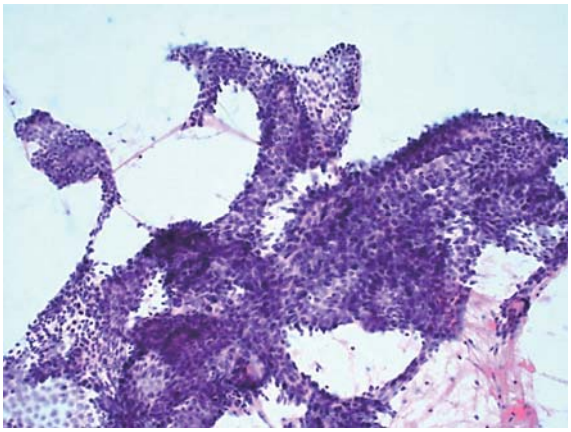

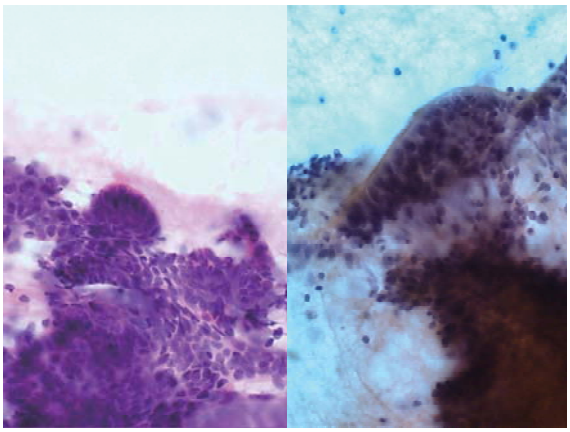

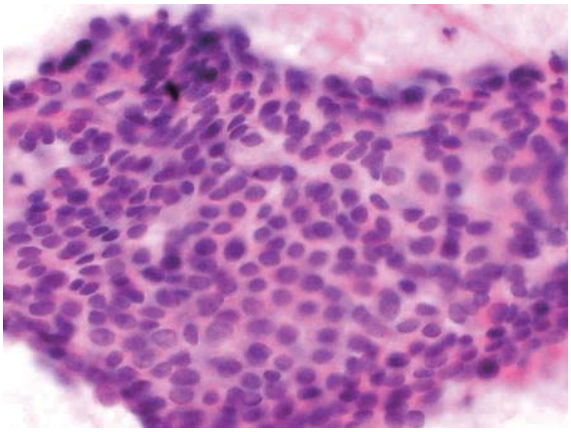

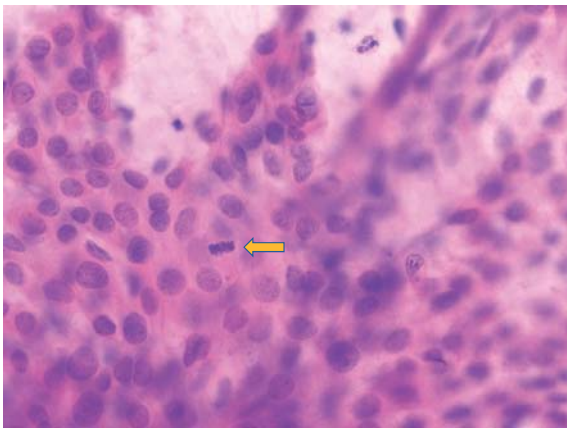

FNAB finding

- ✓ Moderate cellularity
- ✓ Clusters are mostly papillary or trabecular form, but rarely glandular like form
- ✓ Small round cells are uniform nuclei
- ✓ Nuclear irregularity is minimal or mild
- ✓ Single or indistinct nucleoli
- ✓ Mitosis apparence

Differential Diagnosis

☞ **BASALOID SALIVARY GLAND TUMOR**

- Basal Cell Adenoma (BCA)
- Basal Cell Adenocarcinoma (BCADC)
- Pleomorphic Adenoma
- Solid variant of Adenoid Cystic Carcinoma (ACC)
- Metastatic small cell carcinoma
- Basal cell carcinoma (skin)
- Sialoblastoma
- Epithlial myoepithelial carcinoma (EMC)

Differential Diagnosis

- BCA & BCADC
  - BCADC is similar to BCA
  - Malignancy
    - **infiltration into the adjacent tissue**
    - **mitotic figure**
- Solid variant of ACC
- EMC

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FNAB Diagnosis

- **Salivary gland, parotid, right, ABC**
  Basaloid cell with papillary or trabecular configuration, type undetermined (Biopsy is recommended for typing)

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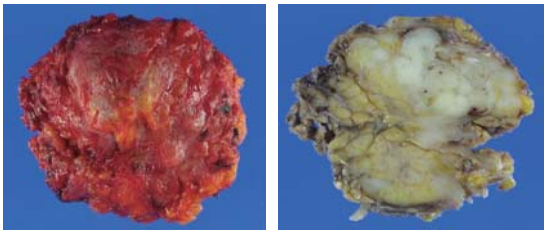
Gross



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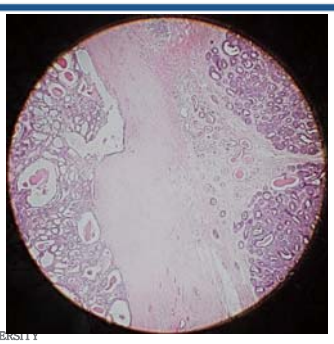
H&E stain



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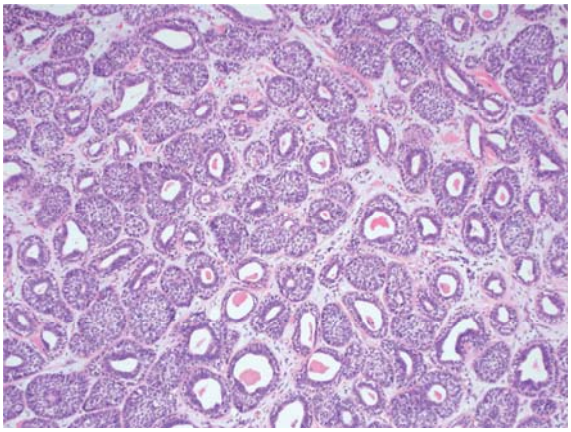

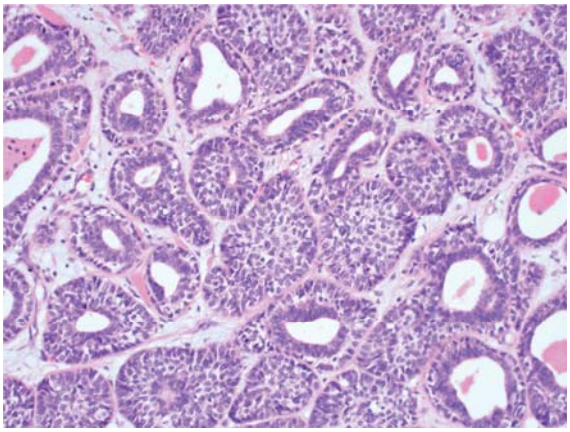

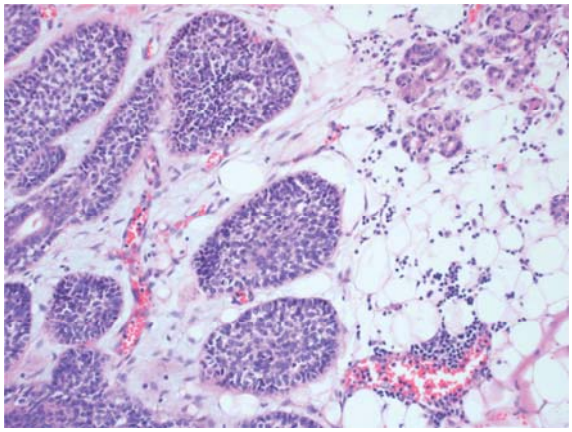

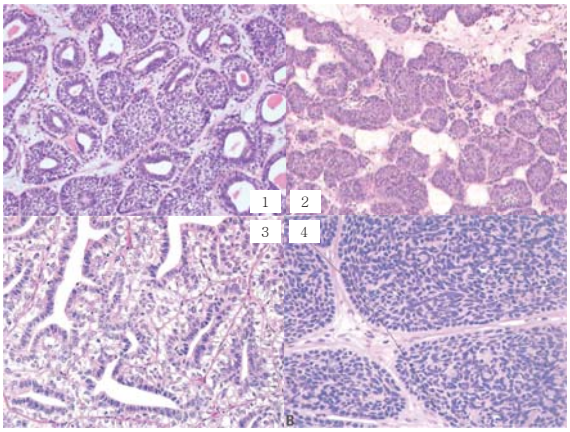
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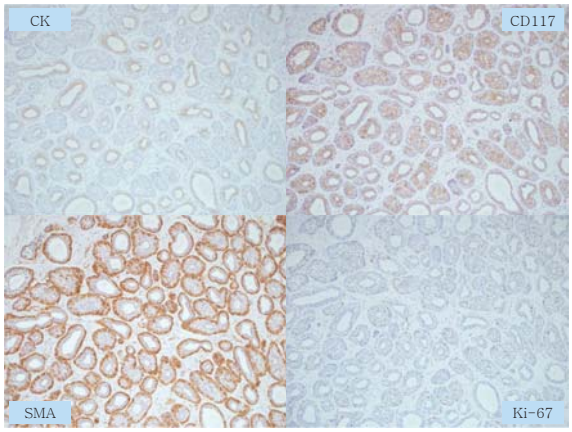
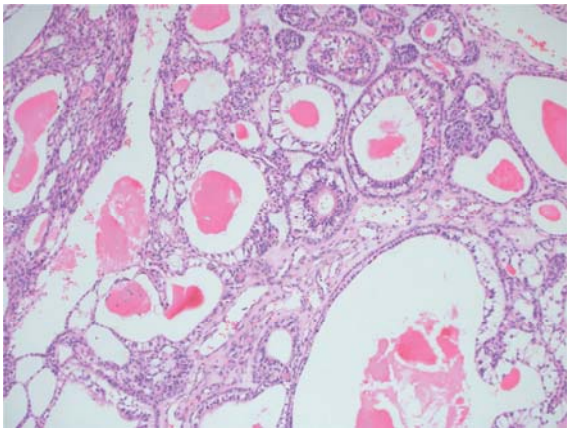
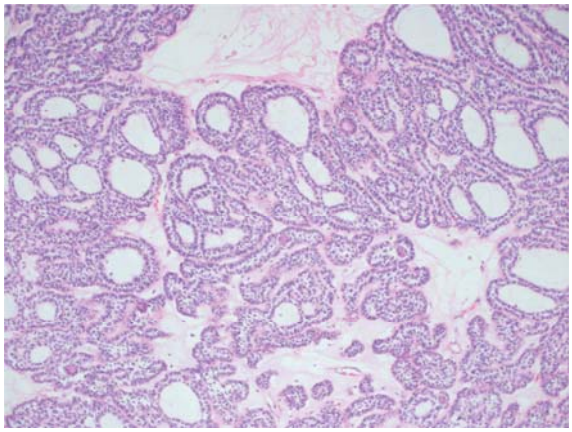
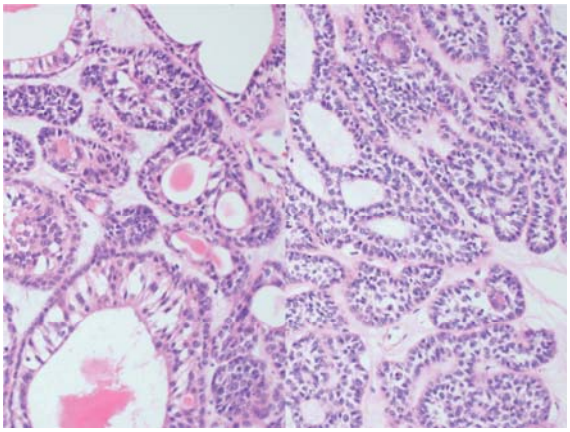
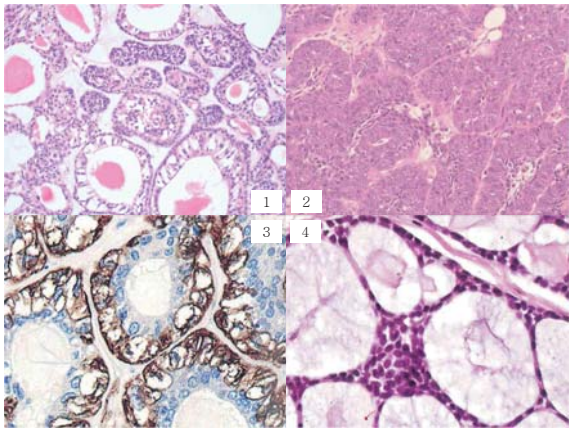

CK
CD117
SMA
Ki-67





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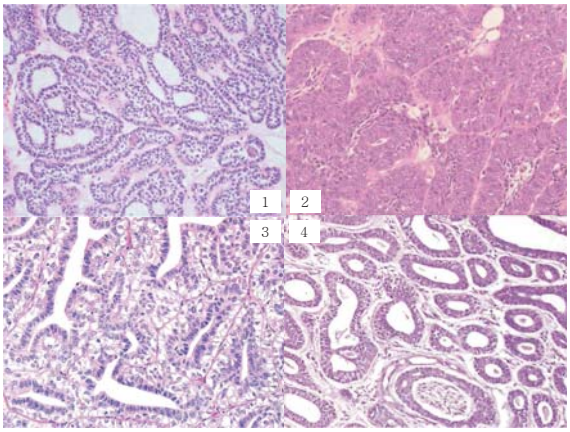
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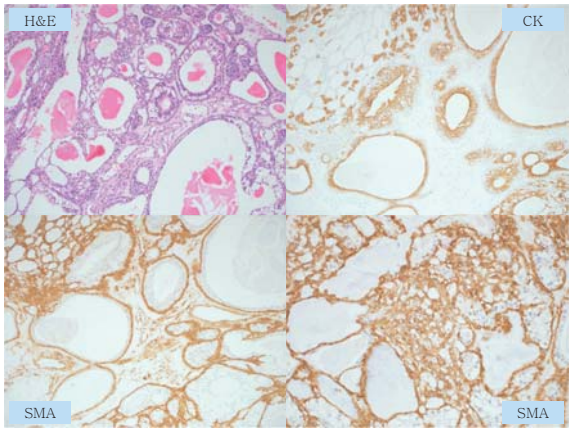
H&E
CK
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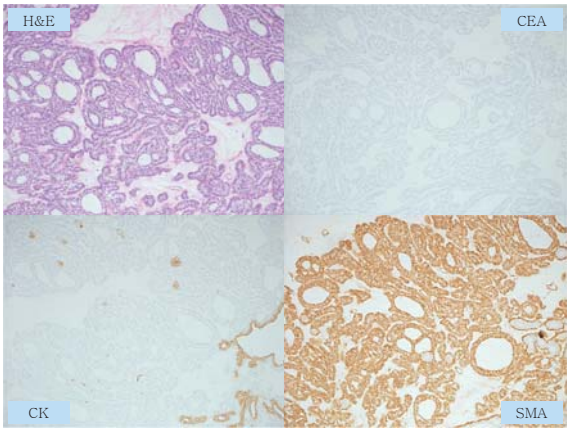
SMA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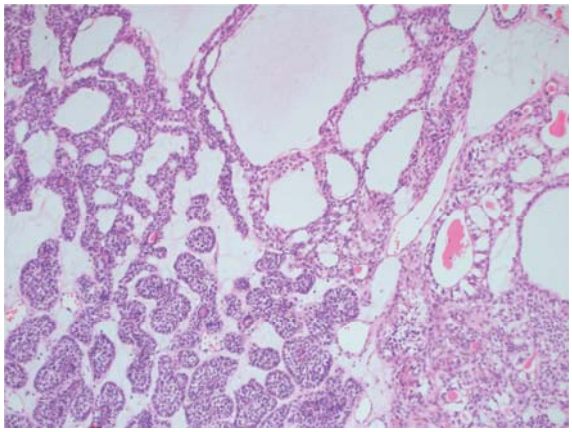

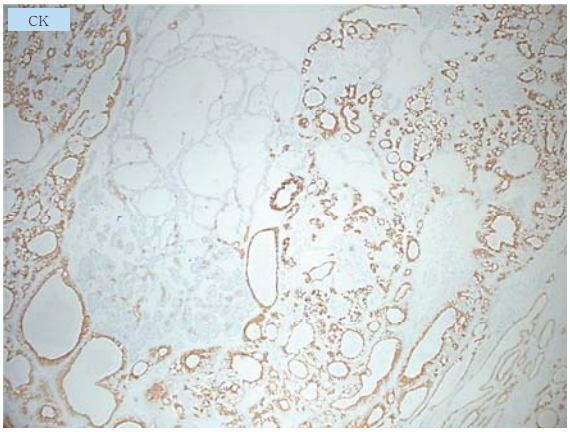
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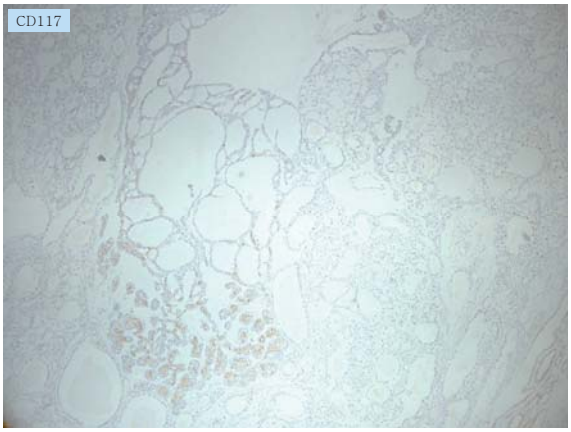

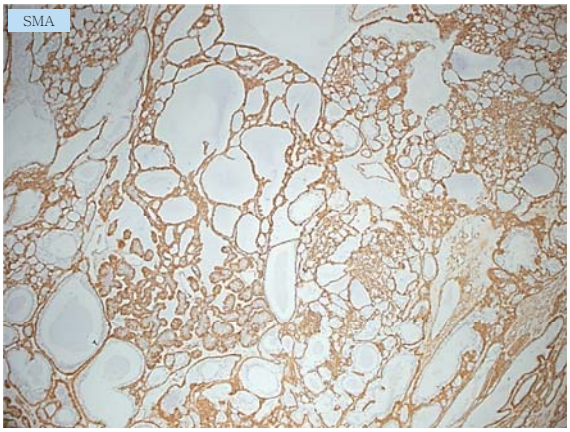

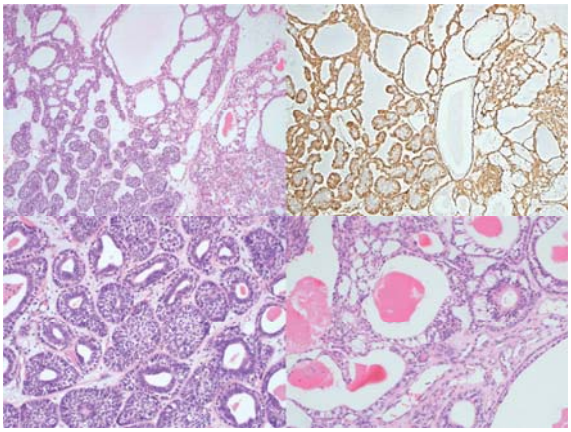

Diagnosis

☞ **Salivary gland, parotid, right, parotidectomy**

Combinated basal cell adenocarcinoma and epithelial-myoepithelial carcinoma (hybrid basal cell adenocarcinoma and epithelial-myoepithelial carcinoma)

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Basal cell adenocarcinoma

- ✓ 1-2% of salivary gland carcinomas
- ✓ Usually parotid gland, adults, ages 50+
- ✓ Grossly, the tumor is not circumscribed, solid, and smooth.
- ✓ BCADC is similar to BCA
- ✓ Solid, trabecular, tubular, and membranous variants.
- ✓ Distinction as a malignancy
  - ✓ mitotic figures, necrotic areas
  - ✓ the presence of infiltration into the adjacent tissues.

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Basal cell adenocarcinoma

- ✓ Two cell types:
  - ✓ Small cells with scant cytoplasm and dark nuclei
  - ✓ Polygonal cells with eosinophilic/amphophilic cytoplasm and clear nuclei
- ✓ Nuclei are minimal irregular, elongated, and with conspicuous nucleoli.
- ✓ Inner luminal cells positive cytokeratin cocktail, CK7, and CD117
- ✓ Peripheral basaloid cells: S100 protein, p63, SMA, and MSA
- ✓ A Ki-67 proliferation index is low

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Table 1. Cytologic differential points of basaloid neoplasms of salivary gland

	BCA	BCADC	ACC
Structures	Cohesive clusters with juxtaposed fibrous stroma	Cohesive clusters with or without stroma	Loose clusters, sheets & cylinders
Architecture	Trabecular/solid "Jigsaw-puzzle"-like	Trabecular/solid /cribriform "Filiform"	Solid/cribriform Sieve-like
Cells	Small uniform dark cells, often two cell types	Small uniform dark cells with minimal atypia	Small round hyperchromatic cells
Nuclei	Oval to elongate with polarity	Oval to elongate with or without polarity	Round to angulated with prominent nucleoli & no polarity
Stroma/ECM	Fibrous, often hyalinized stroma Sharp demarc- ation from epithelial cluster	With or without fibrous, often hyalinized stroma	No stromal tissue Myxohyaline globules

BCA: basal cell adenoma, BCADC: basal cell adenocarcinoma, ACC: adenoid cystic carcinoma,

Epithelial-myoepithelial carcinoma

- ✓ < 0.5% of salivary gland tumors
- ✓ 80% arise in parotid gland
- ✓ Mean age 60 years; 60% in women
- ✓ Grossly, the tumors are often lobulated with cystic areas common
- ✓ Microscopic finding of EMC is the formation of double-layered, duct-like structures
- ✓ Biphasic population consisting of cells of ductal epithelial and myoepithelial origin arranged in clusters and sheets
- ✓ Variable mitotic activity

Epithelial-myoepithelial carcinoma

- ✓ Inner ductal epithelial cells positive keratins.
- ✓ Outer myoepithelial cells calponin, SMA, p63, and, less reliably, S100 protein positive
- ✓ CEA is negative
- ✓ The myoepithelial cells had small, uniform nuclei ; ample, clear cytoplasm.
- ✓ The ductal epithelial cells had larger, mildly pleomorphic nuclei and scanty cytoplasm.

Hybrid tumors in salivary gland

- ✓ Hybrid tumors are characterized by
  - two different types of tumors
  - localized in a single topographic area
- ✓ A review of the literature revealed 38 cases of hybrid tumour reported in 22 publications.

Hybrid tumors in salivary gland

Table I. Clinical findings of hybrid carcinomas of parotid glands (17 cases): review of the literature.

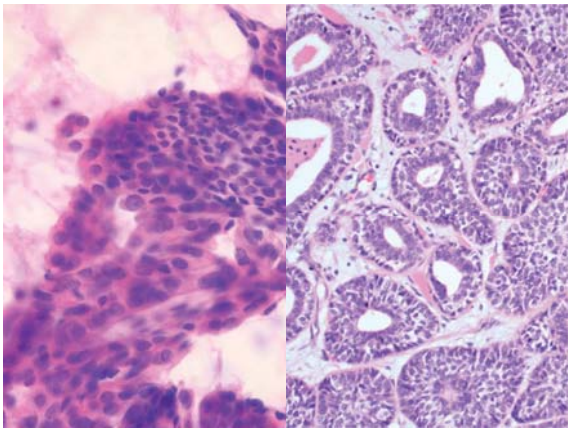
Case no.	Reference	Year	Age (years)	Gender	Site	Size (cm)	Therapy	Follow-up
1	Seifert et al. [1]	1996	53	M	R. parotid	6×3×2	TP	–
2	Ballestin et al. [3]	1996	67	F	L. parotid	5.5	TP	NED at 1 year 6 months
3	Croitoru et al. [4]	1999	53	M	L. parotid	6×4.5×3.5	SR RT	NED
4			71	M	R. parotid	2.9	SR RT	NED
5			28	M	L. parotid	2.5×2	SR RT	AWD
6	Chetty et al. [6]	2000	58	M	Parotid	2.5	PP	–
7	Zardawi et al. [7]	2000	78	F	R. parotid	4.5×4×3	TP	–
8	Nagao et al. [2]	2002	74	F	R. parotid	10	TP RT	NED at 10 months
9			56	M	L. parotid	2	SP RND RT	NED at 2 year, 7 months
10			73	F	L. parotid	2	SP	NED at 4 years
11			40	M	R. parotid	3	SP RT	NED at 15 years
12			65	M	R. parotid	5	TP RND RT	AWD at 4 months
13			42	M	L. parotid	4	SP	–
14			66	M	R. parotid	3.5	TP RND RT	AWD at 1 year 8 months
15	Piana et al. [8]	2004	–	F	R. parotid	4	TP RND RT	NED at 6 months
16	Murphy et al. [9]	2006	68	F	R. parotid	4×4×3	TP	DOC at 5 months
17	Our case	2008	74	M	R. parotid	4.5	SP	NED at 1 year 4 months

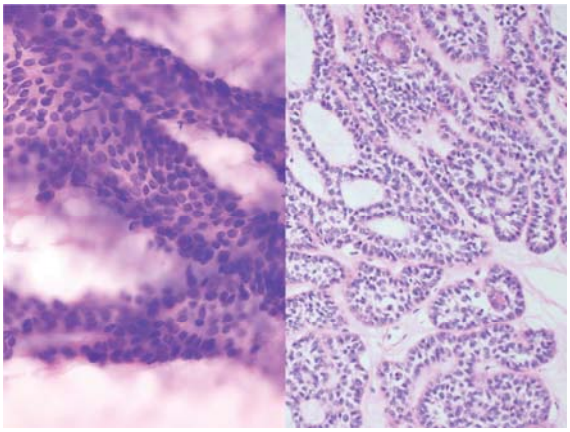
M, male; F, female; R, right; L, left; TP, total parotidectomy; SR, surgical resection; RT, radiotherapy; PP, partial parotidectomy; RND, radical neck dissection; SP, superficial parotidectomy; NED, no evidence of disease; AWD, alive with disease; DOC, died of other causes.

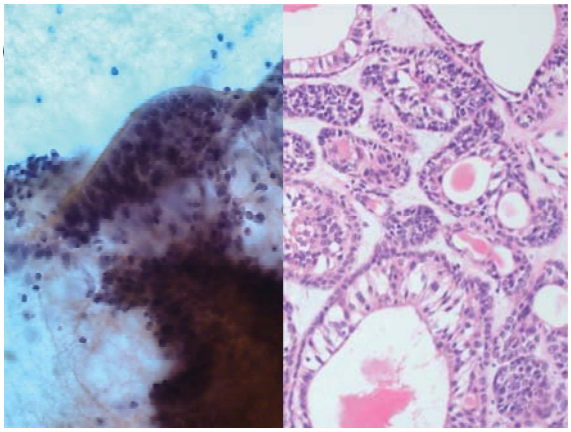
Hybrid tumors in salivary gland

Table II. Histologic findings of hybrid carcinomas of parotid glands (17 cases): review of the literature.

Histologic diagnosis	Case no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Salivary duct carcinoma	+				+		+				+	+	+	+			+	8
Epithelial-myoepithelial carcinoma				+	+	+		+	+	+							+	7
Adenoid cystic carcinoma			+	+			+				+					+		5
Acinic cell carcinoma	+	+					+						+					4
Basal cell adenocarcinoma								+	+							+		3
Mucoepidermoid carcinoma		+	+			+												3
Squamous cell carcinoma										+				+				2
Myoepithelial carcinoma												+						1
Low-grade polymorphous carcinoma							+											1
Lymphoepithelial carcinoma															+			1
Epi-myoepithelial cell carcinoma															+			1








Thank you!!

Type 2 papillary renal cell carcinoma invasion of the renal pelvis by pelvic irrigation cytology.

Yuichi Kinoshita[1], Mayumi Inaba[1,2], Naoki Hosaka[1,2], Tadanori Yamaguchi[3], Tadao K. Kobayashi[4] and Koji Tsuta[2]

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[2]Department of Pathology and Laboratory Medicine, Kansai Medical University, Osaka

[3]Division of Surgical Pathology, Ayabe City Hospital

[4]Cancer Education & Research Center, Osaka University Graduate School of Medicine, Osaka

Objectitive

Papillary renal cell carcinoma (pRCC) is a comparatively common tumor comprising about 7-15% of all malignant renal tumors. However, the previous reports of pRCC were based on fine-needle aspiration or tumor imprint cytology. To our knowledge, there are no reports of using pelvic irrigation cytology to diagnose pRCC.

Case

We here report a case of type 2 pRCC that was diagnosed by pelvic irrigation cytology. The patient was 74-year-old man presented with hematuria during hospitalization in the Coronary Care Unit due to a heart disorder. Renal tumor was detected. After urine and pelvic irrigation cytology, nephrectomy was performed.

Results

On pelvic irrigation cytology, numerous large and small papillary clusters composed of atypical cells having abundant cytoplasm were seen in the necrotic background. The most cytoplasms were granular and a few cells which has clear cytoplasmic features. Macrophages were not found in the background. Histologically, the tumor cells were similar to those of cytology. Immunohistochemically, the tumor cells were positive for cytokeratin (CK) 7, vimentin, epithelial membrane antigen, CD10, alpha-methylacyl-Co A racemase, and negative for CK 20 and CK34βE12, TFE3.

Conclusions

Finally, the tumor was diagnosed as type 2 pRCC. Although, it is necessary to differentiate type 2 pRCC from other diseases on cytology, we consider the diagnosis of type 2 pRCC may be established by meticulous cellular observation.

Vegetable cells mimicking parasite ova in the ileal conduit specimen: a case report

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Department of Laboratory Medicine, National Taiwan University Hospital

Background

Urine cytology is widely used in the diagnostic evaluation and surveillance of tumor recurrence in patients with urothelial carcinoma after radical cystectomy. Vegetable cells are rarely mentioned in the cytological findings. During routine cytological evaluation of urine specimens for malignant cells, we've occasionally noticed vegetable cells to be present in urinary bladder cancer patients with ileal conduits. And these rare cells may lead to cytological misinterpretation.

Case

A 74 year-old woman had radical cystectomy with ileal conduit due to deep musculature invasive urothelial carcinoma of the bladder in 1995. She received urine cytology tests twice a year regularly for monitoring recurrence. In June 2016, the cytological picture showed some thick-walled cells those were mimicking the ova of Schistosoma, blood flukes.

Discussion

Squamous cell carcinoma of the urinary bladder is strongly associated with Schistosoma haematobium infection, so the rarely identified thick-walled cells were suspected to be the ova of Schistosoma species initially. From the kidney to the urine collecting bag over the abdominal wall, the urine flows past the adhesive material that attaches the collecting bag to the cutaneous ostomy site. The source of these contaminated vegetable cells could not be vegetable remnants in feces remained in the ileal conduit segment 21 years ago. Previous studies have suggested that the vegetable cells in urine specimens from ileal conduits came from the ostomy adhesive (guar gum). The outer layer of guar seed endosperm contained thick-walled cells identical to those observed in the ostomy adhesive. We should be able to distinguish the differences between vegetable cells and the ova of S. haematobium.

Conclusion

The vegetable cells are occasionally noticed in addition to the intestinal epithelial cells in urine specimens of the patients with ileal conduits. With special caution about contaminated vegetable cells on examining the urines, we may avoid misinterpreting these cells as parasitic ova.

Uterine Clear Cell Adenocarcinoma of Postmenopausal Women : A Case Report

Jungsook Cho(CTIAC)
Cheil General Hospital
& Women's Healthcare Center

Background

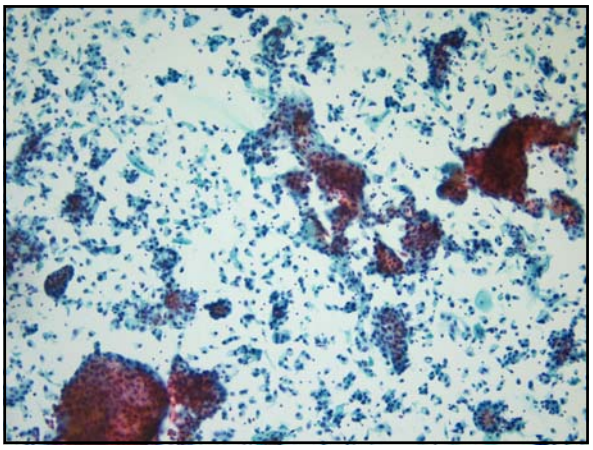
- Only 1 to 5% of all endometrial carcinomas
- Usually older, post-menopausal women
- Aggressive clinical behavior and a poor outcome.
- The exact cause or pathogenesis of clear cell carcinoma are unclear.
- The optimal treatment modalities of the clear cell carcinoma are not well defined.
- However, no commonly accepted guidelines are currently available for the management of these patients.

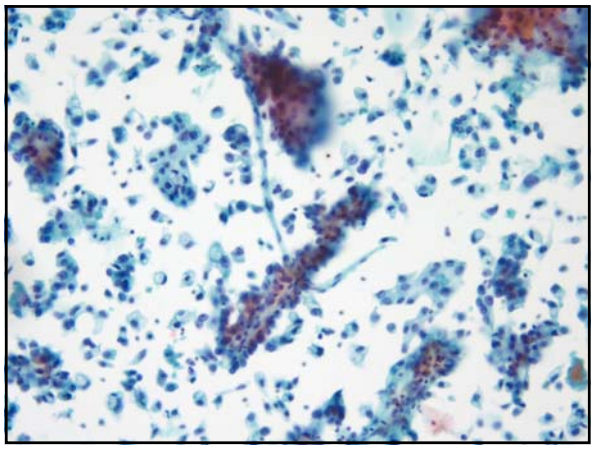
Clinical information

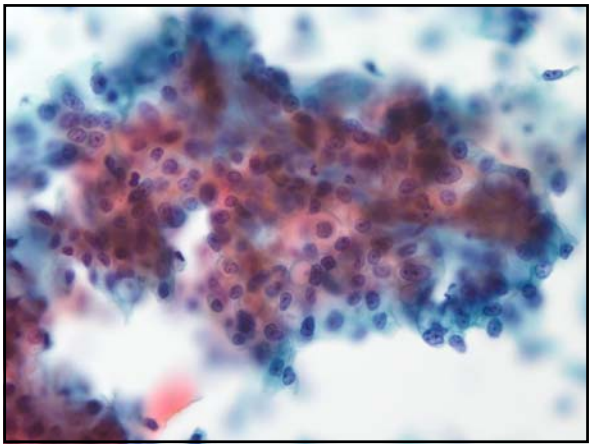
- 63 years old women
- Pap. Smear : Squamous cell ca. at outside clinic
  (National healthcare program)
- Since Jun. 2015 : vaginal spotting
- Mar. 2016 : referred to our hospital

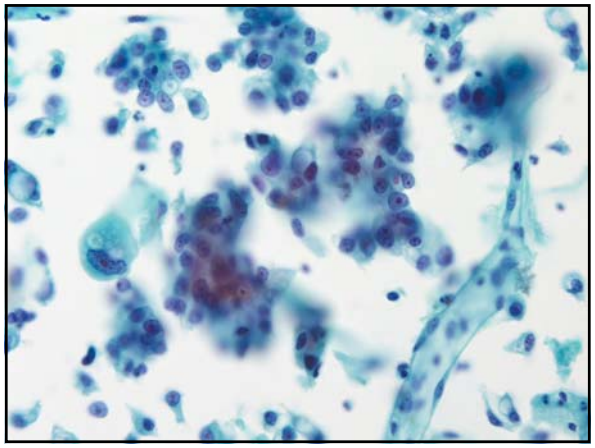
Physical Exammination

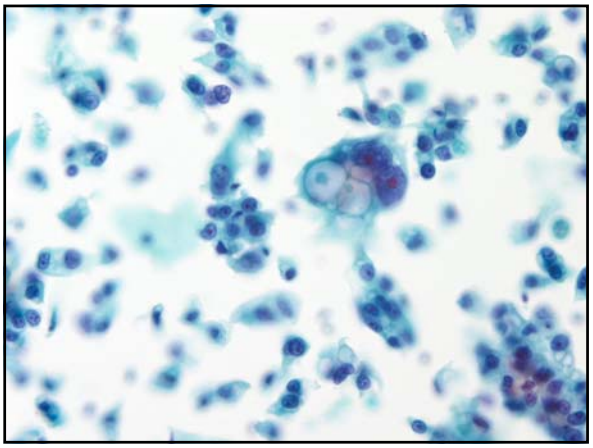
- Cancer antigen marker :
  CA125 : 8.3 U/ml
  SCC : 0.6 ng/ml
  CEA : 1.2 ng/ml
- Pelvis MRI & sonography & PET-CT
  : 7.7 x 4.8x 4.3cm extent
- Pap. Smear & colposcopic biopsy & HPV test

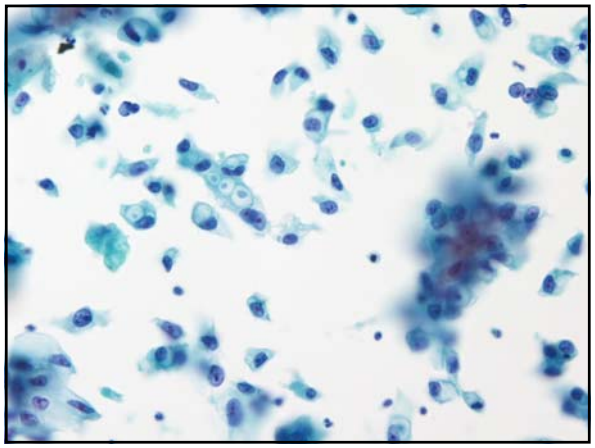


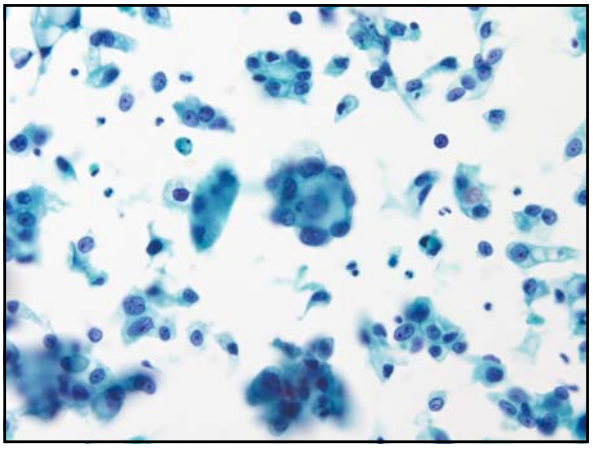


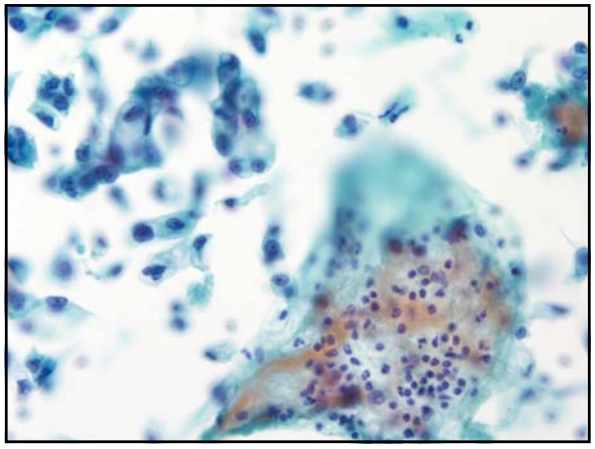


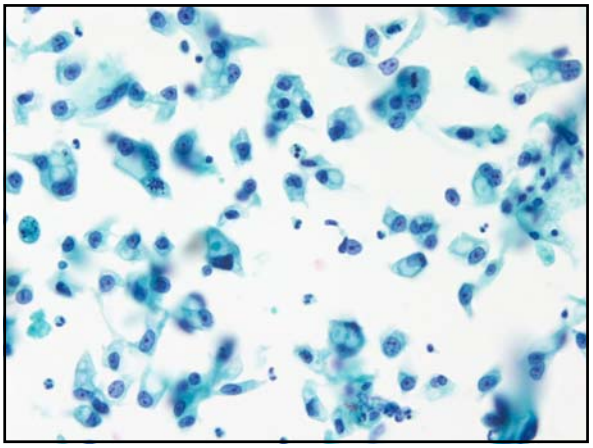


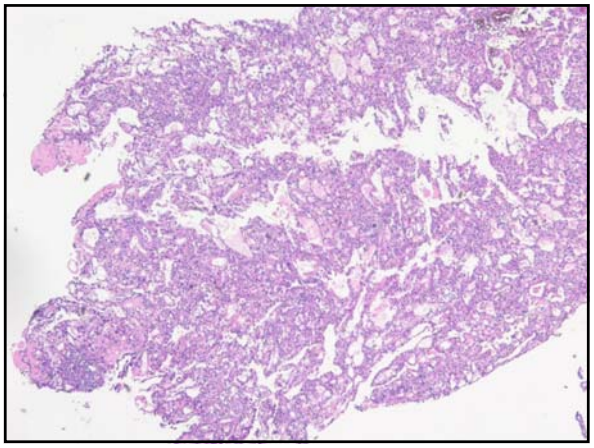


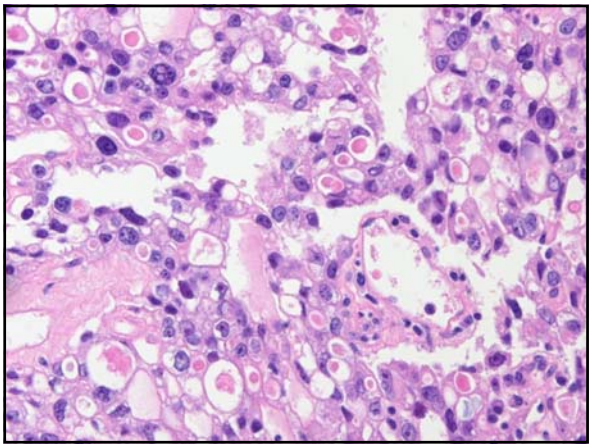












제일병원

Pathologic Diagnosis

- Pap. Smear : Clear cell carcinoma
- Colposcopic biposy diagnosis
  : Clear cell carcinoma
- HPV test : Negative

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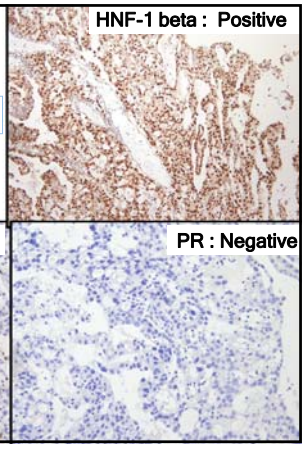
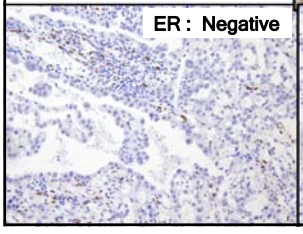
Immunohistochemistry





Pre- and Postoperative Diagnosis

- R/O Cervical cancer(stage IB2)
- R/O Endometrial cancer (stage IIIC1)

Operation name

- Radical abdominal hysterectomy
- Bilateral salpingoophorectomy
- Bilateral pelvic lymphnode dissection
- Bilateral paraaortic lymphnode dissection
- Rt. Parametrium lymphnode dissection
- Peritoneal washing cytology
- Bilateral ureter dissection

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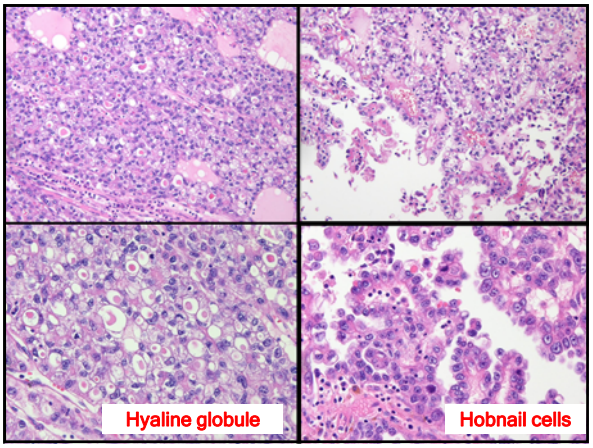

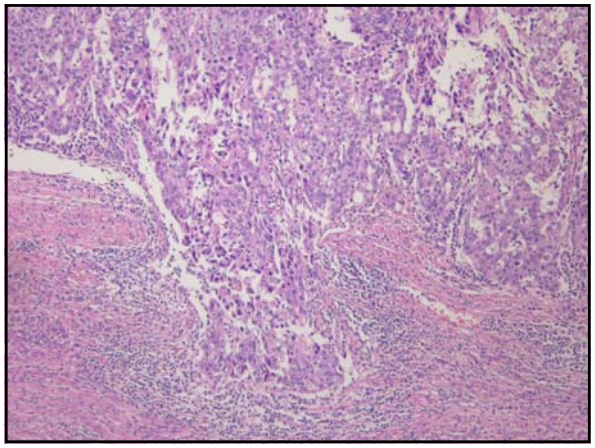

제일병원

Histologic Diagnosis

Uterus, endometrium, radical hysterectomy :
Clear cell carcinoma
(1) tumor size : 6 cm in greatest dimension
(2) no cervical invasion
(3) myometrial invasion, focal, superficial
(0.5 / 5 mm of myometrium)
(4) lymphovascular invasion : Absent
Uterus, myometrium, radical hysterectomy :
Direct invasion of tumor
Lymph node, pelvic, right, dissection :
Clear cell carcinoma, metastatic(1/20)

Endometrial Clear Cell Carcinoma

Clinical features

- High grade tumors (automatically FIGO grade III) with aggressive behavior
- Poorer prognosis than high grade(grade3) endometrioid adenocarcinoma
- If confined to corpus, has better prognosis than serous carcinoma of same stage

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Endometrial Clear Cell Carcinoma

Cytologic Findings

- Hyperchromatic crowded groups and numerous abnormal single cells in a background of tumor diathesis
- Large tumor cells with abundant cytoplasm appeared translucent and pale
- Occasional cytoplasmic vacuoles with/ without hyaline globules
- Hyperchromatic and pleomorphic nuclei with single or multiple prominent nucleoli
- anisonucleosis, a loss of polarity, a clear cell border
- irregular chromatin pattern
- micro-vacuolate cytoplasm with lymphocyte infiltration
- aberrant bare nuclei and very few normal
- Hobnail cells and a mirror-ball pattern of cell clusters.

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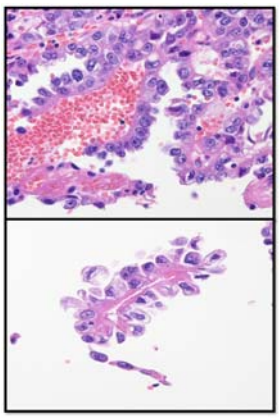
Hobnail cells

- Characterized by inconspicuous cytoplasm, and a bulbous nucleus which protrudes into glandular lumen
- Appear as poorly differentiated round cells with eccentric large nuclei and macronucleoli.



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Endometrial Clear Cell Carcinoma

Histologic Findings

- Variable growth patterns : papillary, tubular, tubulocystic or sheet-like architecture
- Large, clear to rarely eosinophilic cells with glycogen, distinct margins and hobnail cells
- May have colloid-like material in tubules
- Enlarged angulated nuclei with enlarged irregular nucleoli
- Eosinophilic intracytoplasmic hyaline globules.
- Benign endometrium is usally atrophic, not hyperplastic
- Immunohistochemistry : HNF-1ß(+), Ki-67(+), ER(-), PR(-)

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Endometrial Clear Cell Carcinoma

Differential Diagnosis :

- Clear cell carcinoma of ovarian/ endocervical origin
- Clear cell change : Arias-stella reaction
- Endometrial hyperplasia with clear cell change
- Metastatic renal cell carcinoma
- Yolk sac tumor and embryonal rhabdomyosarcoma (in children)

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Endometrial Clear Cell Carcinoma

Risk factors :

- DES use during pregnancy
- Genetic predisposing factors
- Instability of microsatellite repeat sequences
- HPV infection
- Overexpression of Bcl-2 protein
- Variation of the p53 gene
- External or environmental factors

제일병원

J Midlife Health. 2015 Apr-Jun; 6(2): 85–87. PMCID: PMC4481746
doi: 10.4103/0976-7800.158964

Clear cell carcinoma of cervix in a postmenopausal woman: A case report

Subrata Pal, Sritanu Jana, and Kingshuk Bose

1. Association of clear cell carcinoma of cervix and vagina with in-utero exposure of DES.(DES related clear cell carcinoma , mean age : 18.9 years)
2. Median age of clear cell carcinoma non-associated with DES exposure is 53 years and it commonly presents with irregular vaginal bleeding (80%).
3. Clear cell carcinomas should be differentiated from Aris-stella reaction, micro glandular hyperplasia and mesonephric hyperplasia in adult.
4. In children, it also to be differentiated from yolk sac tumor and embryonal rhabdomyosarcoma

제일병원

Endometrial Clear Cell Carcinoma

Treatment

- Total abdominal hysterectomy with BSO
- Radiation therapy
- Chemotherapy

Prognosis

- Relatively poor prognosis
- Clear cell carcinoma is characterized by late recurrence compared to other carcinomas
- 5-year overall survival was 40~68%

제일병원

British Journal of Cancer (2006) 94, 642–646

www.bjcancer.com

Uterine papillary serous and clear cell carcinomas predict for poorer survival compared to grade 3 endometrioid corpus cancers

CA Hamilton[1,2,3], MK Cheung[1,2], K Osann[4], L Chen[3], NN Teng[1,2], TA Longacre[2,5], MA Powell[6], MR Hendrickson[2,6], DS Kapp[1,7] and JK Chan[*,1,2]

[1]Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, 875 Blake Wilbur Drive, MC 5827, Stanford, CA 94305, USA; [2]Stanford Cancer Center, 875 Blake Wilbur Drive, MC 5827, Stanford, CA 94305, USA; [3]Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of California, San Francisco Comprehensive Cancer Center, 1600 Divisidero, San Francisco, CA 94115, USA; [4]Division of Hematology/Oncology, Department of Medicine, Chao Family Comprehensive Cancer Center, University of California, Irvine – Medical Center, 101 The City Drive, Orange, CA 92868, USA; [5]Department of Pathology, 300 Pasteur Drive, Stanford, CA 94305, USA; [6]Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Washington University School of Medicine, 4911 Barnes Hospital Plaza, St Louis, MI 63110, USA; [7]Department of Radiation Oncology, 875 Blake Wilbur Drive, MC 5827, Stanford, CA 94305, USA

제일병원

Table1. The comparison of UPSC, Clear cell ca and G3 endometrioid carcinoma

	UPSC (n=1473)	CC (n=391)	G3EC (2316)
Median age(years)	70	68	66
Stage*			
I	533 (36%)	197 (50%)	1388 (60%)
II	171 (12%)	54 (14%)	252 (11%)
III	268 (18%)	71 (18%)	353 (15%)
IV	501 (34%)	69 (18%)	323 (14%)
5-year disease-specific survival	55%	68%	77%
Proportion of corpus cancers	10%	3%	15%
Proportion of corpus cancer deaths	39%	8%	27%

*Stage based on FIGO 1988. UPSC =uterine papillary serous carcinoma. CC=clear cell carcinoma. G3EC=grade 3 endometrioid carcinoma.

제일병원

제일병원

Summary

Endometrial Clear cell carcinoma

- 1~5% of all endometrial carcinoma
- Older women, post-menopausal women
- Chief complaint is vaginal bleeding/ discharge
- Identical to those arising in the endocervix, vagina, and ovary.
- Enlarged, hyperchromatic nuclei with prominent nucleoli
- Abundant, cyanophilic cytoplasm, clear cells or hobnail cells
- Solid, papillary, tubular and cystic patterns
- Commonly high grade and aggressive with deep invasion
- Not associated with hyperestrogenic state.

Thank you
for your attention !

제일병원

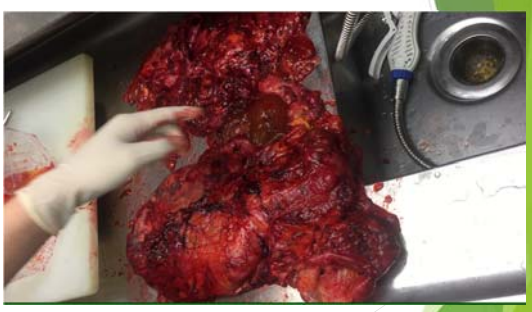
Case Study of Pseudomyxoma Peritonei

Department of Pathology, University of Ulsan College Medicine,
Asan Medical Center, Seoul, Republic of Korea
Young-jae OH

- Pseudomyxoma peritonei(PMP)?
- Cytomorphological features of PMP
- Material and method
  (Cases of PMP in Asan Medical Center)
- Conclusion

Peudomyxoma peritonei?

- Clinical condition caused by excessive mucin from malignant mucin producing cells.
- Can be metastasized
- Patient could be death

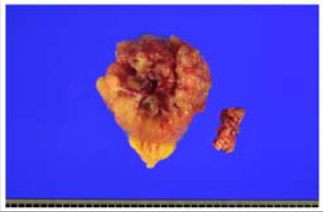


Classification of PMP `2016(WHO)

	Architecture	Cellular features
Archite 1.Strip or small i 2.Cells – very sca 3.Mucin – may ap	1.Cribriform structure **2.Cells – numerous** 3.Extensive invasion of underlying organs	1.Neoplastic cells in single layer 2.Nuclei small and regular 3.Cells – deceptively bland in appearance
Intracytoplas Varia	**Intracytoplasmic mucin** Variable. Signet-ring cells may be seen	**Mitoses** More common. May be atypical

High grade

- Mainly, the primary site - **appendix**
- Rarely, ovary and gastrointestinal organs also can be primary site



Pseudomyxoma peritonei: cytomorphologic findings and clinicopathologic correlates

Irem Onur, MD[a], Momin T. Siddiqui, MD, FIAC[b], Paul E. Wakely Jr., MD[c], Syed Z. Ali, MD, FRCPath, FIAC[b,*]

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Significance of epithelial cell clusters in pseudomyxoma peritonei

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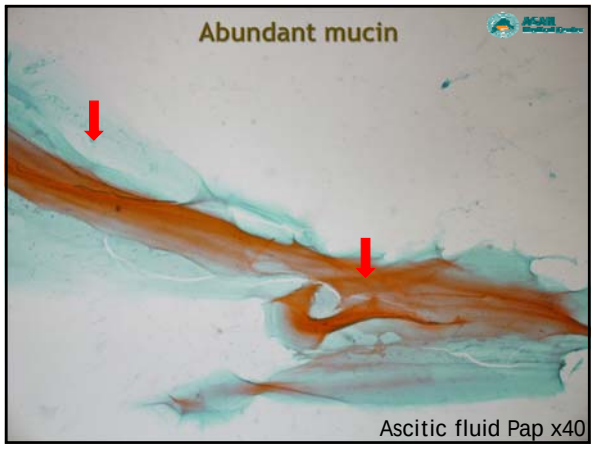
[a]Department of Cytopathology and Gynaecological Pathology, [b]Department of Cytology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

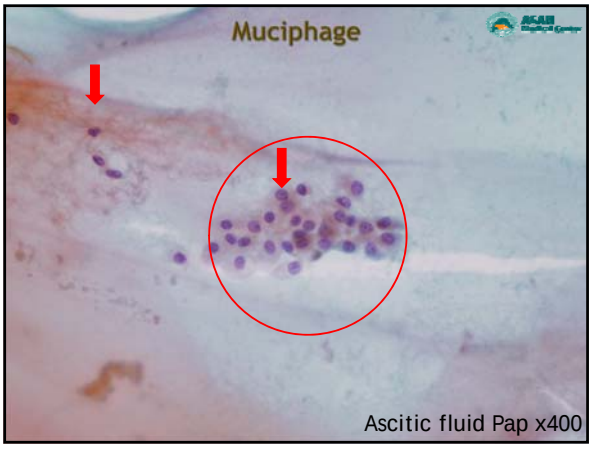
Accepted for publication 22 December 2015

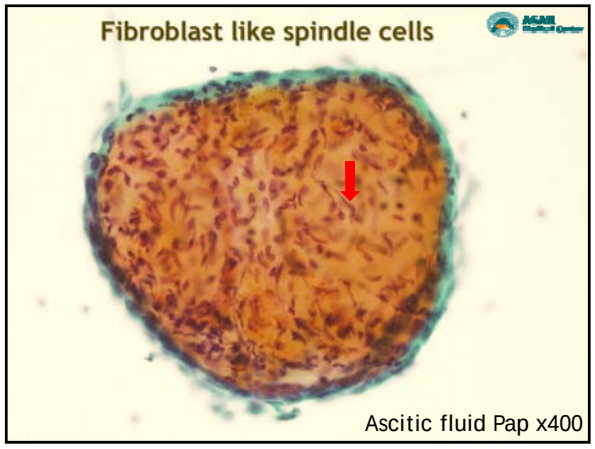
R. K. Badyal, A. Khairwa, A. Rajwanshi, R. Nijhawan, S. Radhika, N. Gupta and P. Dey

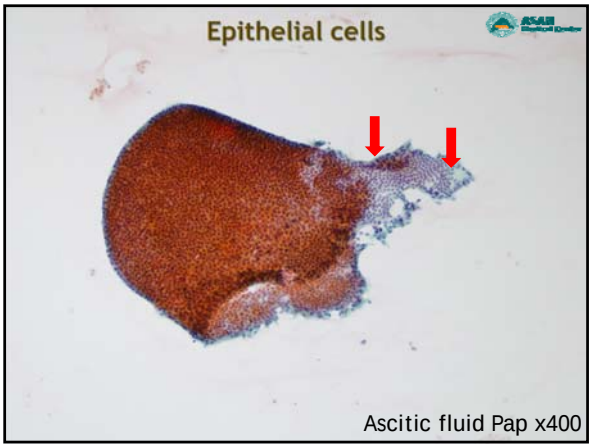
Cytological features of PMP

- Abundant mucin
- Muciphages
- Few epithelial cells
- Fibroblast-like/spindle cells









Materials and Methods

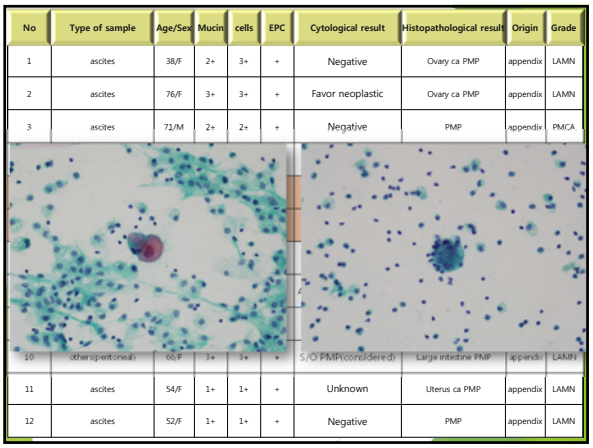
2012~ Sep. 2016 ,9 PMP patients, Asan Medical Center

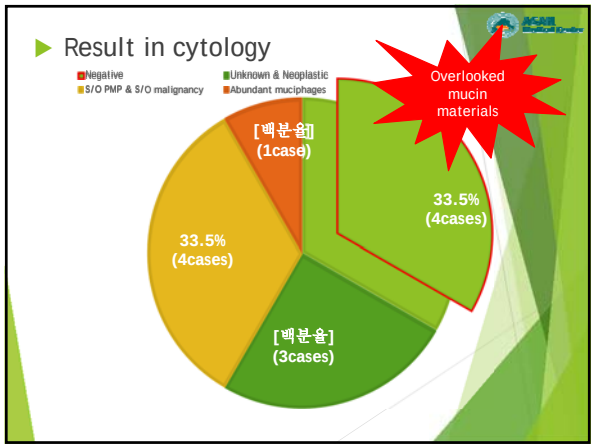
Male : female = 2 : 7

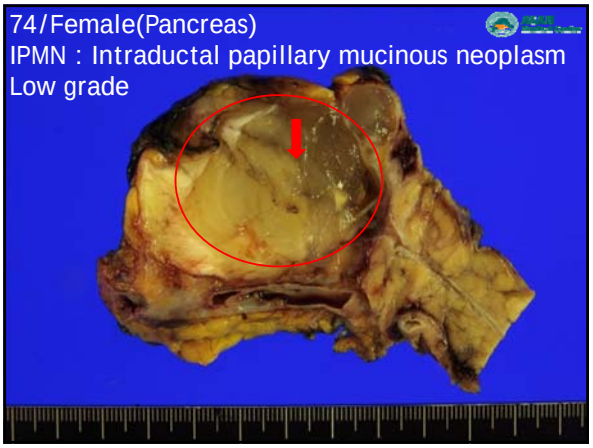
Age : 38 ~ 74 (mean 65.25)

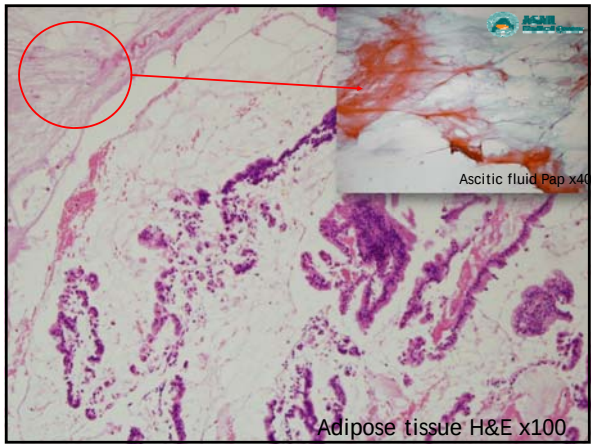
Reviewed the cytopathologic slides of PMP 12 cases

No	Type of sample	Age/Sex	Mucin	cells	EPC	Cytological result	Histopathological result	Origin	Grade
1	ascites	38/F	2+	3+	+	Negative	Ovary ca PMP	appendix	LAMN
2	ascites	76/F	3+	3+	+	Favor neoplastic	Ovary ca PMP	appendix	LAMN
3	ascites	71/M	2+	2+	+	Negative	PMP	appendix	PMCA
10	other(peritoneal)	66/F	3+	3+	+	S/O PMP(considered)	Large intestine PMP	appendix	LAMN
11	ascites	54/F	1+	1+	+	Unknown	Uterus ca PMP	appendix	LAMN
12	ascites	52/F	1+	1+	+	Negative	PMP	appendix	LAMN

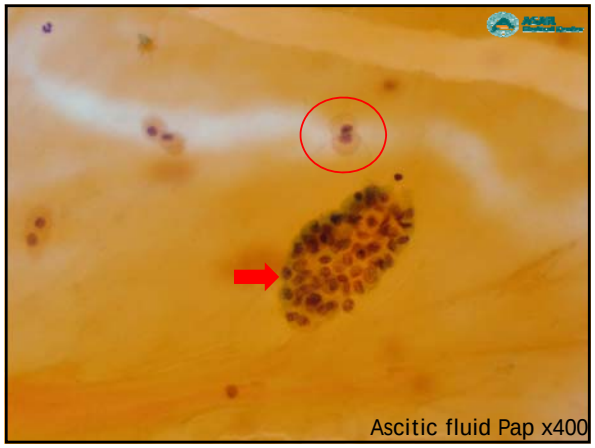


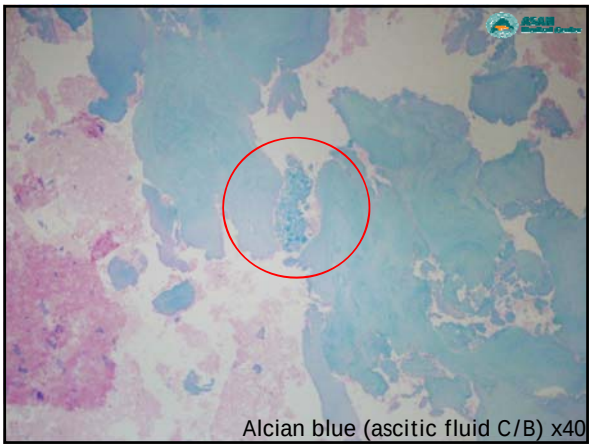


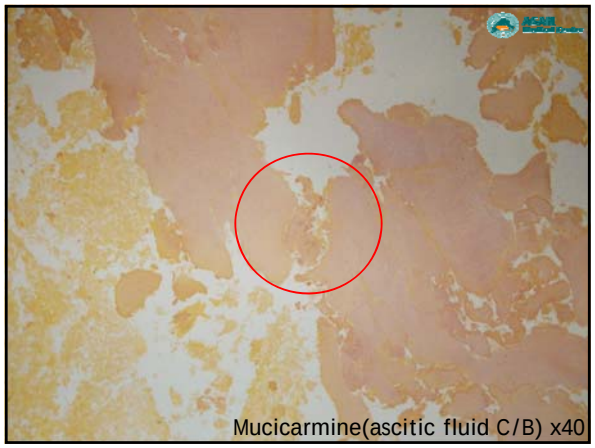


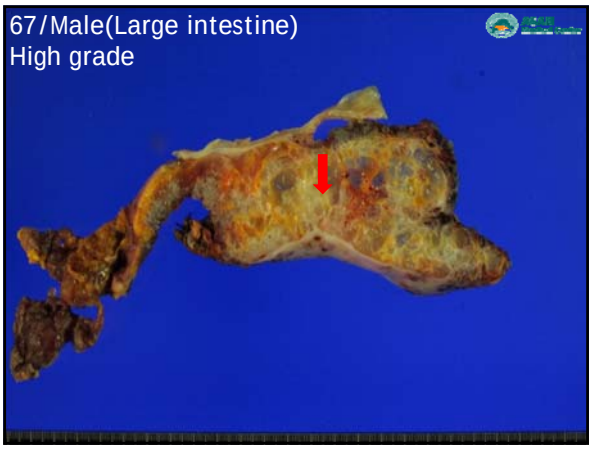


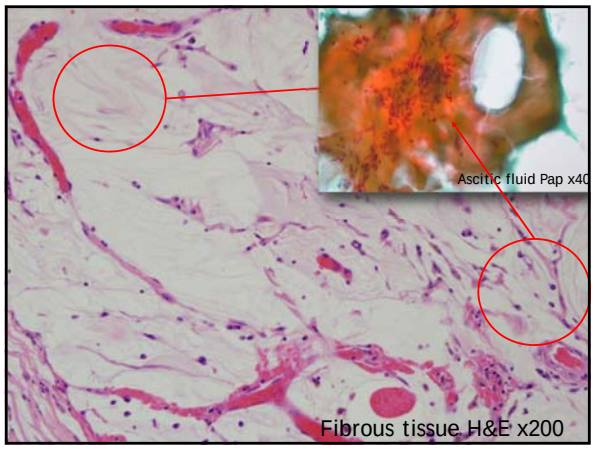

Ascitic fluid Pap x400
Adipose tissue H&E x200

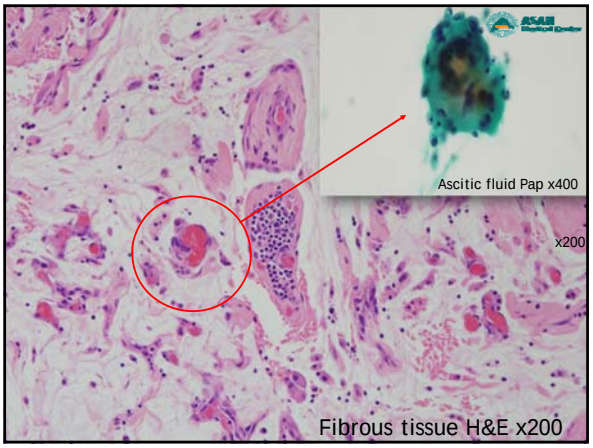

Ascitic fluid Pap x400

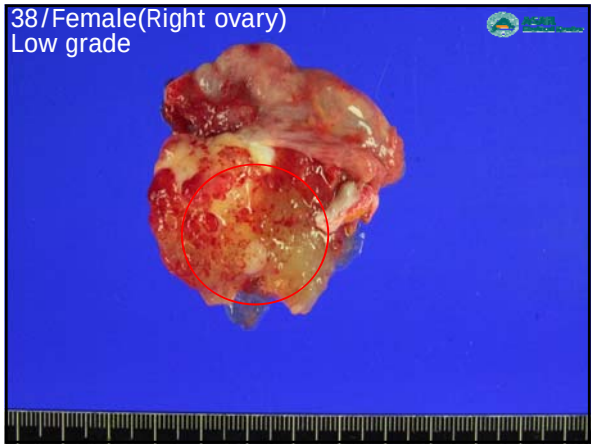

Alcian blue (ascitic fluid C/B) x40

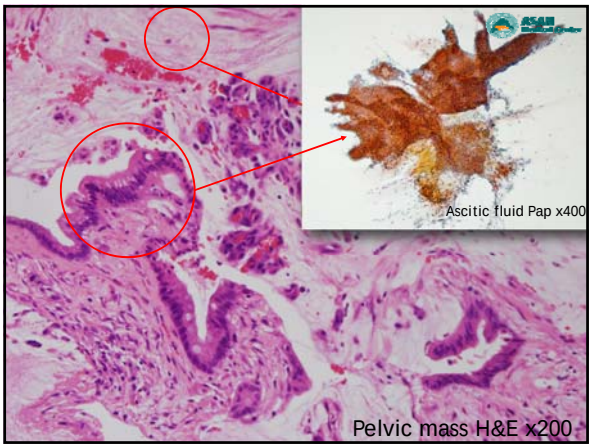

Mucicarmine(ascitic fluid C/B) x40

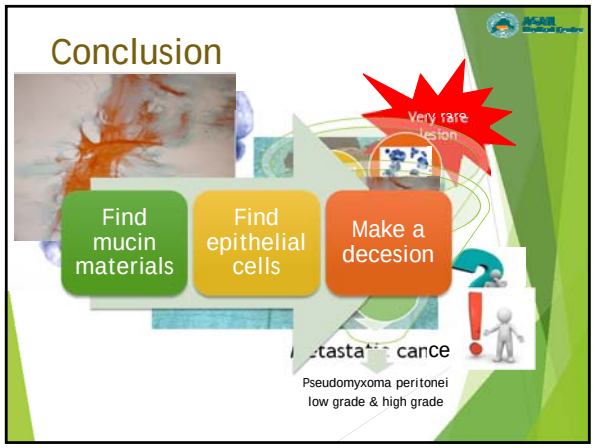

67/Male(Large intestine)
High grade


Ascitic fluid Pap x40
Fibrous tissue H&E x200


Ascitic fluid Pap x400
x200
Fibrous tissue H&E x200


38/Female(Right ovary)
Low grade


Ascitic fluid Pap x400
Pelvic mass H&E x200


Conclusion
Very rare lesion
Find mucin materials
Find epithelial cells
Make a decesion
Pseudomyxoma peritonei
low grade & high grade


Thank you for your attention

A Rare Case of Malignant Peritoneal Mesothelioma With Monosomy 9

Kazuki NAKASHIMA[1)], Toshihiko MURAYAMA[1)], Kouji ISHIHARA[1)]
Hoshihusa KASHIMA[1)], Hiroyuki KAWAKAMI[1)], Eiji NAGATA[1)],
Shinji MATSUMOTO[2)], Kazuki NABESHIMA[2)]

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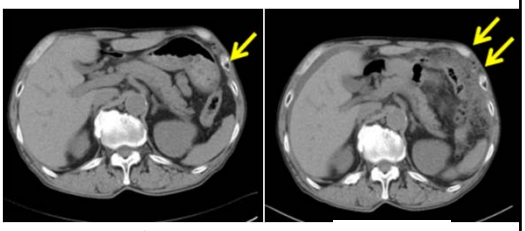
Introduction

The pathological diagnosis of malignant mesothelioma is often difficult because of varied histopathological feature. And it is also difficult to distinguish it from reactive mesothelial cells and disseminated cancer cells. For the reason, the diagnostic significance of molecular biological technique has been confirmed for reliable diagnosis of Malignant mesothelioma.
Now we report a rare case of malignant peritoneal mesothelioma with monosomy 9 chromosome revealed by FISH analysis.

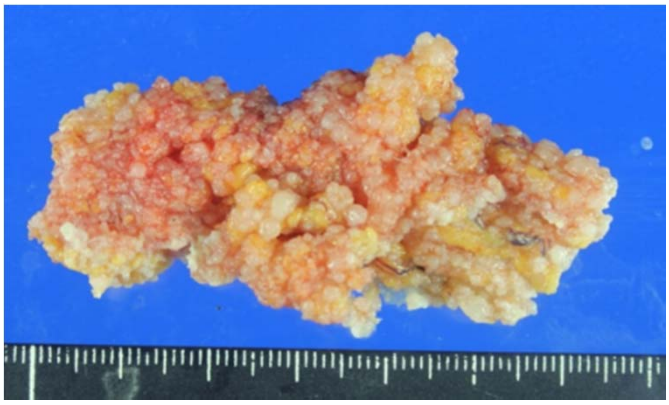
Case

[Patient]
A 80-year-old male
[Past history]
Hypertension, Mantle cell lymphoma diagnosed 4 years ago.
[Life history]
He does not have a history of asbestos exposure.
[Present illness]
He was under chemotherapy for Mantle cell lymphoma.Increased CT value of fatty tissue in the left abdominal cavity and ascites fluid were detected. The peritoneal biopsy was performed for the possibility of other malignant tumor except Mantle cell lymphoma.
[CT Findings]
Compared with CT on Feb., the CT on Dec. revealed increased CT value of fatty tissue in the left abdominal cavity and increased ascites fluid.



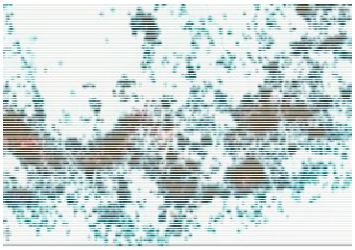
Feb.2015 Dec.2015

Gross appearance

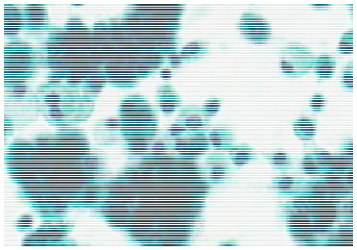


Many white nodules spread equally all over greater omentum, peritoneum, mesocolon and mesentery.
The gross appearance were not likely to be malignant lymphoma but cancer of peritoneal dissemination.

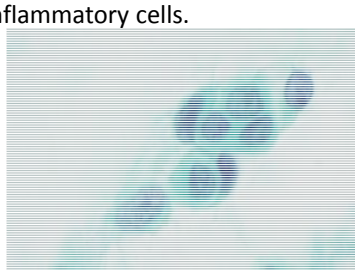
Cytological findings



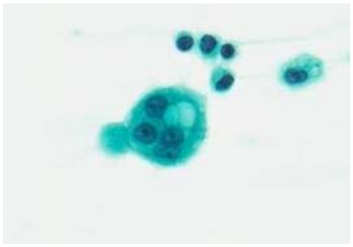
There were many large cell clusters seen against a background of many inflammatory cells.



The cell clusters showed tubular or papillary structure.

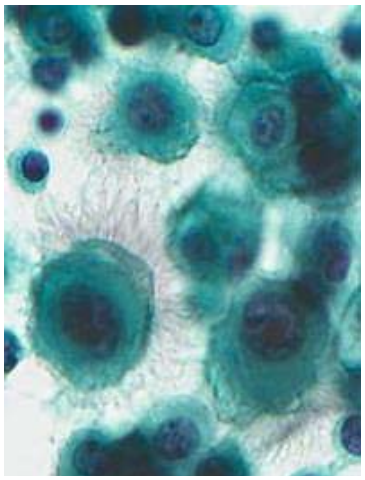


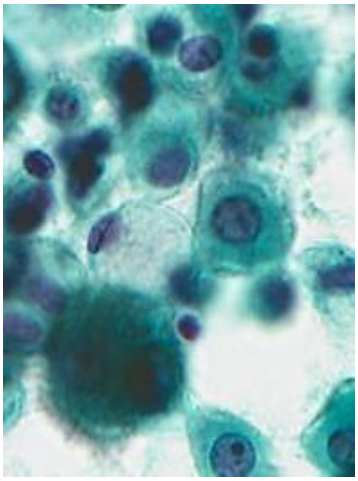
The tumor cells showed the cell mutual inclusion.



Multinucleation and hump formation were observed.

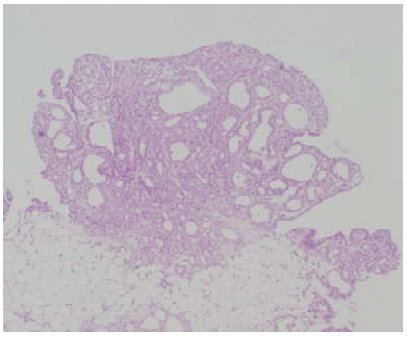
Cytological findings

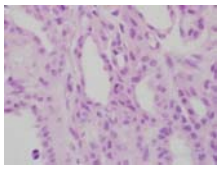


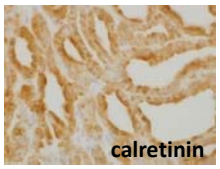


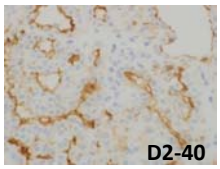
The tumor cells were surrounded with well developed microvilli and showed indistinct cellular margin. Their nuclei were round or oval and located in the center or the margin of cell. They showed fine granular nuclear chromatin and swelling nucleoli.

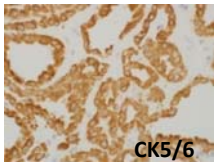
Histological findings and immunohistochemical study







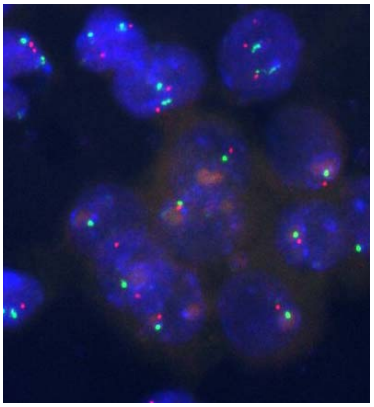




Small masses of peritoneum consist of relatively uniform tumor cells with tubular or papillary growth pattern. And some tumor cells infiltrate into fatty tissue.

Calretinin	+	EMA	−
WT-1	+	CK7	+
D2-40	+	CK20	−
CK5/6	+	CEA	−
p53	+	Ber-EP4	−

This table shows the results of immunohistochemical studies.
The tumor cells were positive for the mesothelial markers such as WT-1 and calretinin and negative for the adenocarcinoma markers such as CEA and Ber-Ep4.



FISH Analysis of p16 On Cytological Smear And Cell Block Preparation

	Monosomy	86.1%
	FITC single signal	5.6%
	Homozygous deletion	0%
	Normal	7.6%
	Heterozygous deletion	0.7 %

FISH analysis of p16 gene was performed on cell block preparation and cytological smear. A centromere of chromosome 9 was labeled with green signal, the p16 located in 9p21 was labeled with red signal.
The FISH analysis showed dominantly the monosomy of chromosome 9 over 90%

Discussion

Malignant Mesothelioma(MM) is a tumor of poor prognosis. However, the life span can be extended by early diagnosis and therapy. The more the incidence of MM increases, the more precise and rapid pathologic diagnosis is required. But it is often difficult to detect MM in early stage. Therefore the cytology may play an important role for the diagnosis of MM because cytology is the first approach of the examination of body cavity fluid.

The morphological diagnosis of MM is often difficult, therefore, it must be important to apply immunochemical and molecular biological technique to differentiate from metastatic carcinoma, sarcomas and reactive mesothelial lesions. Immunochemical staining is useful for the determination of mesothelial origin.

But immunochemical study is not enough to make a differentiation between MM and reactive mesothelial lesion. Since the p16 genetic homozygous deletions of MM were reported in 1994, FISH analysis of p16 has been applied to differ MM from reactive mesothelial lesion. However, there is a difference in behavior of FISH between pleura and peritoneal origin, the p16 genetic homozygous deletions is 60～100%（average70%） in malignant pleural mesothelioma, whereas is low of 25～51% (average40%) in malignant peritoneal mesothelioma.

In this case, FISH analysis on cell block and cytological smear revealed monosomy of chromosome 9 over 90% implying neoplastic change and it was useful to make an diagnosis of MM.

Conclusion

*We reported a rare case of malignant peritoneal mesothelioma with monosomy of chromosome 9.

*Though p16 deletion could not be confirmed by FISH analysis, this case was diagnosed as malignant peritoneal mesothelial on the ground of Immunochemical study showing mesothelial origin and FISH analysis showing monosomy of chromosome 9 over 90% that implied neoplasia.

*This case taught us the importance to apply the immunochemical and molecular biological approach for accurate cytological diagnosis of malignant mesothelioma.

Difference in Cytological Findings of Pancreatic Adenocarcinoma Depending on Sampling Technique

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K. Otuka, CT,IAC, Y. Sakamoto, CT,IAC, S. Fukuda, MD, M. Nagamine, MD
Department of pathology, Japan Red Cross Kumamoto Hospital

Aim

The three main cytological materials used to diagnose pancreatic ductal carcinoma are pancreatic juice cytology (PJC), endoscopic brush cytology (BC), and endoscopic ultrasound-guided fine needle aspiration cytology (FNAC). Different instruments and specimen preparation are used in each method. We retrospectively examined cytological materials obtained by each method to compare their cytological findings.

Method

We searched our hospital record and identified 42 cases of well-differentiated invasive ductal adenocarcinoma of the pancreas histologically diagnosed on resected surgical specimens between 2009 and 2014. Among these 42 cases, we selected pre-operative cytology specimens that were diagnosed as “positive for malignancy” as follows; 10 PJC, 10 BC, and 10 FNAC. As controls, same number of cytology specimens were selected that were diagnosed as “negative for malignancy”, and also subsequent biopsies revealed no malignancy. We retrospectively reviewed these 60 specimens and evaluated the following 14 cytological characteristics; background necrosis, background mucus, frequency of tumor cells with intracytoplasmic mucin, nuclear protrusion, binucleation, cell cannibalism, nuclear membrane irregularity, prominent nucleoli, cell size, nuclear size, cellular anisocytosis, nuclear anisocytosis, nuclear-cytoplasmic ratio, and chromatin pattern in tumor cells. Chi-squared test and Mann-Whiteney-U test were performed to analyze the data.

Results

There were statistically significant differences in frequency of tumor cells with intracytoplasmic mucin, nuclear protrusion, cell size, nuclear size, and nuclear anisocytosis depending on sampling technique. Specifically, in PJC, there were more tumor cells with intracytoplasmic mucin, smaller cell size, smaller nuclear size, and less variation in nuclear size comparing to BC and FNAC. In FNAC, there were less tumor cells with intracytoplasmic mucin and more nuclear protrusion comparing to the other 2 methods.

Conclusion

There are significant difference in cytological findings depending on sampling technique used to evaluate pancreatic adenocarcinoma. It is valuable to understand the cellular effect of different sampling technique and specimen preparation.

Table 1 Study of cases

Specimen	No	Age	Sex	Tissue diagnosis	Progress	Diameter
PJC	1	59	F	tub1>pap	pT1	pTS1(11×7mm)
	2	57	F	tub1>tub2	pT1	pTS2(35×20mm)
	3	62	F	tub1	pT1	pTS2(22×14mm)
	4	65	F	tub1	pT1	pTS1(18×16mm)
	5	77	M	tub1	pT1	pTS1(17×11mm)
	6	58	M	tub1>tub2	pT3	pTS1(10×7mm)
	7	64	F	tub1>tub2	pT4	pTS2(31×30mm)
	8	69	M	tub1>tub2	pT4	pTS2(20×25mm)
	9	75	F	tub1>tub2	pT4	pTS2(21×25mm)
	10	84	M	tub1	pT3	pTS1(16×15mm)

Specimen	No	Age	Sex	Tissue diagnosis	Progress	Diameter
EBC	1	64	F	tub1	pT1	pTS2(35×30mm)
	2	65	F	tub1>tub2	pT3	pTS1(16×15mm)
	3	50	F	tub1>tub2	pT3	pTS1(12×13mm)
	4	64	F	tub1>tub2	pT4	pTS2(31×30mm)
	5	61	F	tub1>tub2>por	pT3	pTS1(17×20mm)
	6	72	M	tub1>tub2	pT3	pTS1(18×12mm)
	7	56	F	tub1>tub2	pT3	pTS2(25×20mm)
	8	69	M	tub1>tub2	pT4	pTS2(20×25mm)
	9	63	F	tub1	pT1	pTS1(11×10mm)
	10	63	M	tub1	pT1	pTS1(7×15mm)

Specimen	No	Age	Sex	Tissue diagnosis	Progress	Diameter
FNAC	1	65	F	tub1>tub2>por	pT4	pTS1(17×15mm)
	2	59	M	tub1>tub2	pT1	pTS1(12×11mm)
	3	64	M	tub1>tub2	pT4	pTS2(23×20mm)
	4	74	M	tub1>tub2>por	pT3	pTS2(29×23mm)
	5	75	M	tub1	pT3	pTS1(15×10mm)
	6	72	M	tub1>tub2	pT3	pTS1(18×15mm)
	7	63	M	tub1>por	pT3	pTS2(36×15mm)
	8	54	M	tub1	pT1	pTS2(15×20mm)
	9	50	F	tub1>tub2	pT3	pTS1(12×13mm)
	10	59	M	tub1>tub2	pT3	pTS2(23×22mm)

- PJ C No. 8 and PBC No. 8 are same patient.
- PBC No.3 and FNAC No.9 are same patient.

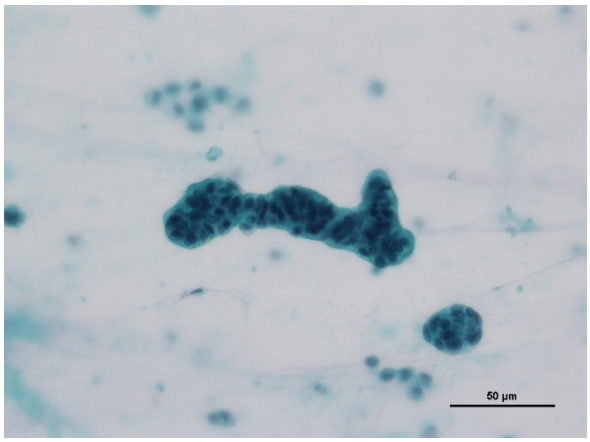
Table 2 Numerical value of the item

Item	Point:0	Point:1	Point:2	Point:3	Point:4
Background necrosis	Nothig	Very small amount	Small amount	Moderate amount	Large amount
Background mucus	Nothig	Very small amount	Small amount	Moderate amount	Large amount
Intracytoplasmic mucin	Nothig	A few	Few	Moderate	Many
Nuclear protrusion	Nothig	A few	Few	Moderate	Many
Binucleation	Nothig	A few	Few	Moderate	Many
Cell cannibalism	Nothig	A few	Few	Moderate	Many
Nuclear membrane irregularity	Smooth	Very mild irreguler	Mild irreguler	Moderate irreguler	Severe irreguler
Chromatin pattern		Coarse granular	Granular	Fine granular	Very fine granular
* 10 items were subjected to assay is digitizing.					
Prominent nucleoli	Exist	Not exist			
** This item was chi-square test.					
Cell size	Measurement by image software				
Nuclear size	Measurement by image software				
Nuclear-cytoplasmic ratio	Calculated from the cell and the nucleus				
Cellular anisocytosis	Cell diameter SD				
Nuclear anisocytosis	Nuclear diameter SD				

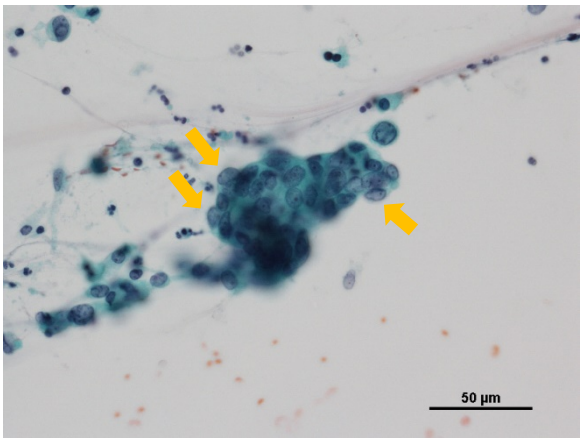
Table 3 Significant difference test result

cytological characteristics	3 method comparison of positive for malignancy	3 method comparison of negative for malignancy	Positive for malignancy and negative for malignancy
Background necrosis	NSD	NSD	NSD
Background mucus	NSD	NSD	NSD
Cytoplasmic mucin	**SD**	NSD	NSD
Nuclear protrusion	**SD**	NSD	**SD**
Binucleation	NSD	NSD	**SD**
Cell cannibalism	NSD	NSD	**SD**
Nuclear membrane irregularity	NSD	NSD	**SD**
Prominent nucleoli	NSD	NSD	NSD
Chromatin pattern	NSD	NSD	**SD**
Cell size	**SD**	NSD	NSD
Nuclear size	**SD**	NSD	**SD**
Nuclear-cytoplasmic ratio	NSD	**SD**	**SD**
Cellular anisocytosis	NSD	NSD	NSD
Nuclear anisocytosis	**SD**	NSD	**SD**

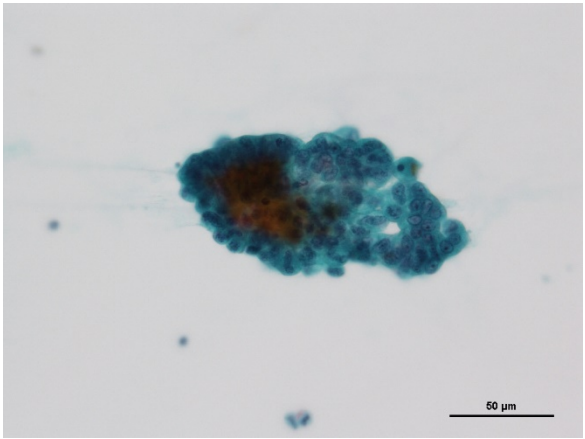
* SD: significant difference, NSD: no significant difference



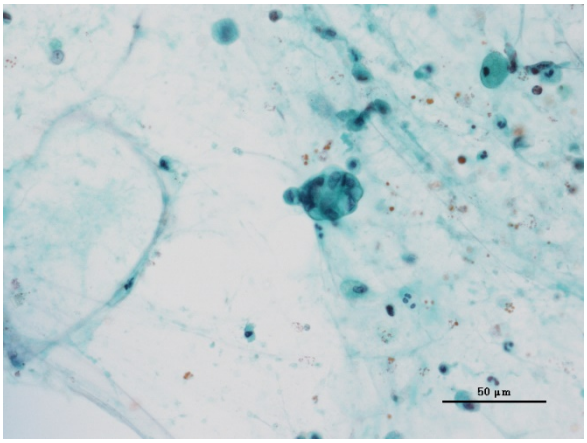
Phot.1 Papillary cluster seen in the PJC
Margins of the cluster is smooth, the cells constituted a small, various sizes is not observed. (papanicolaou stain, ×40).



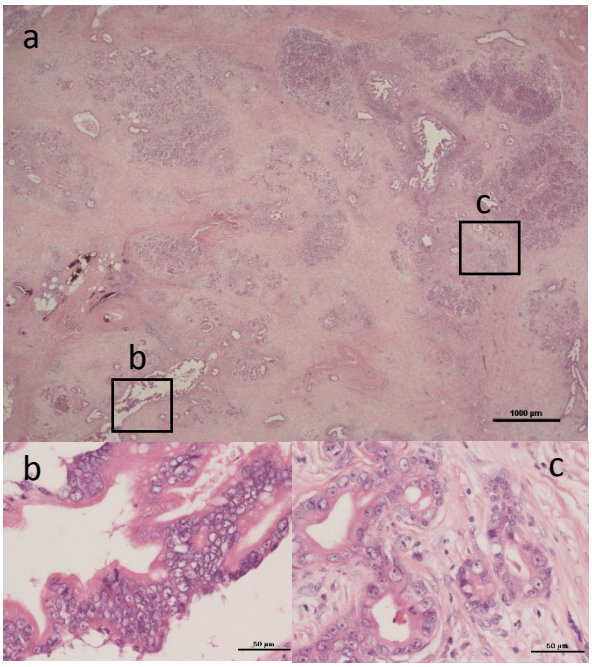
Phot.2 Cell cluster seen in FNAC, photo 1 in the same case.
Cell cluster seen in FNAC is marginal is the irregular, protrusion of the nucleus is prominent (yellow arrow). In addition, the cells that make up is larger than that of the PJC, various sizes can be seen. (papanicolaou stain, ×40).



Phot.3 Cell claster that has been seen in EBC
The size of the cell, the size of the nucleus, various sizes appear in EBC to be greater than the PJC. (papanicolaou stain, x40).



Phot.4 Intracytoplasmic mucin seen in the PJC
Many of mucus containing cells than other collection method was found in PJC. (papanicolaou stain, x40).



Phot.5 In different histological cell type another site of pancreatic duct carcinoma
Overall picture of the tumor area (a:HE stain, x1.25). Tumor cells of a large pancreatic tube is less various sizes in a small (b: HE stain, x40). Invesive tumor cell is large, stand out various sizes, it is a remarkable small and large dissimilarity (c:HE stain, x40).

A Case Report of Pancreas Fine Needle Aspiration

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Background

Pancreatic ductal adenocarcinoma represents about 85% of pancreatic head neoplasms. The pancreatic lymphoma is rare, comprising about 2% of extranodal lymphoma and 0.5% of all pancreatic masses. Because of the clinical and radiological findings, it is difficult to differentiate the entity from pancreatic adenocarcinoma.

Case

A 65-yeaar-old man was a hepatitis B carrier and started to have progressive epigastralgia, which could radiated to his back, dull pain, obstructive jaundice and tea-color urine developed. Abnormal results of serum test included liver function, pancreatic relative enzymes and CA199. The radiological findings showed over 5 cm mass in the pancreatic head, peripancreatic regions and hepatic hilum. Sono-guided FNA and ore biopsy were performed. FNA smear showed numerous large dicohesive cells with clumped chromatin and occasional nucleoloi with crushing artifact. The staining results of biopsy specimen are in favor of a diffuse large B cell lymphoma with high proliferative activity.

Discussion

The pancreatic lymphoma is extremely rare and most are diffuse large B cell lymphoma. It is male predominance and the patients ranged in age from 35-75 years (mean age 55 years). The patients usually present some symptoms such as abdominal pain, jaundice and pancreatitis mimicking the pancreatic carcinoma clinically. Based on the unusual cytomorphology of pancreatic lymphoma, the main differential diagnoses include pancreatic neuroendocrine tumor, acinar cell carcinoma and florid pancreatitis.

Conclusion

It is useful for diagnosis of hematolymphoid malignancy by rapid on-site evaluation of FNA combine flow cytometry. It is important to distinguish pancreatic lymphoma form pancreatic adenocarcinoma due to the different prognosis and treatment. The accurate diagnosis of pancreatic lymphoma could avoid unnecessary surgery and provide more appropriated managements of these patients.

Morphological changes in Doxorubicin resistant small cell carcinoma

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Objective

In most cases of small cell lung cancer (SCLC), SCLC has already spread by the time it is found, so chemotherapy is usually part of treatment if a person is healthy enough. The tumor cells resistant to chemotherapy are considered to show peculiar cellular changes for the action mechanism of the anticancer drug. This time, we confirmed cytomorphological changes seen in Doxorubicin resistant small cell carcinoma.

Methods

Wild type and Doxorubicin resistant type culture cell line of SCLC (H69) were used for this study. The area, the circumference, the major and minor axis length of both cytoplasm and nucleus were measured. And, with the measured values, the mean area, the standard deviation of the area, N/C (nucleus/cytoplasm ratio), the ellipticity, the peround and the pleomorphism were calculated. About nucleolus, number was counted and the area was measured.

Results

In the area of both cytoplasm and nucleus, resistant type was 2 times larger than wild type and showed wider size variation. About nucleolus, resistant type was larger than that of wild type in number and varied in size. The nucleus of resistant type was more pleomorphic than that of wild type.

Conclusion

This study revealed that Doxorubicin resistant type showed quite different feature from wild type small cell carcinoma. There is a possibility of leading to misdiagnosis on histological typing when we make cytodiagnosis in Doxorubicin resistant case of small cell carcinoma. This time, we studied cellular changes only in Doxorubicin resistant SCLC, and it can be considered that there are many patterns of cellular change due to resistance to other anticancer drugs. Therefore we keep it in mind when we make cytological diagnosis of recurrent cases underwent chemotherapy.

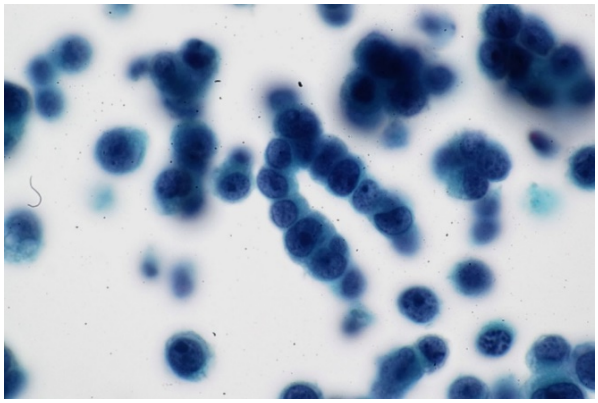

Figure 1
Wild type of culture cell line of SCLC.
The tumor cells showed adhesive and Indian file arrangement.

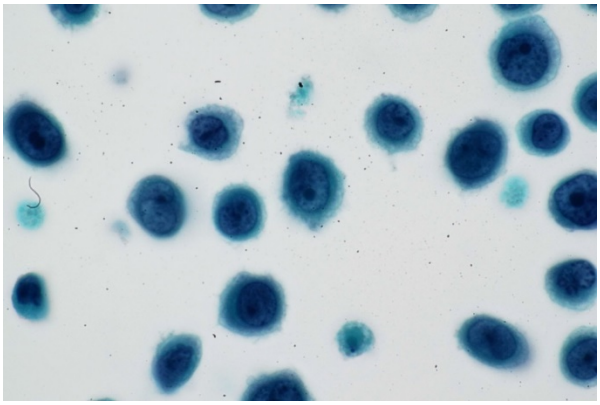

Figure 2
Doxorubicin resistant type of culture cell line of SCLC.
The tumor cells were isolated and larger than wild type.

	Wild type			**Doxorubicin resistant type**		
	Cytoplasm (SD)	**Nucleus (SD)**	**Nucleolus**	**Cytoplasm (SD)**	**Nucleous (SD)**	**Nucleokus**
Area	76.24 (26.43)	36 (9.96)	3.98	140.56 (36.72)	66.24 (21.87)	4.50
Peround	1.19	1.19		1.15	1.22	
Pleomorphism	0.172	0.092		0.0717	0.369	
Ellipticity	1.2	1.25		1.16	1.45	
Number			0.48			0.84
N/C ratio	0.4721			0.4712		

The Effects of Formalin Fixing Conditions on Fluorescence in situ hybridization in cell block of effusion cytology

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Background

A cell block method can be applied for immunocytochemical analysis or molecular biological technique of specific biomarkers, and it contributes for accurate diagnosis of effusion cytology. On the other hand, many studies have investigated the effects of formalin fixation for the biomarker expression in tissue samples, there is no study in cytological materials. In the present study, we investigated the effect of formalin fixing conditions on fluorescence in situ hybridization (FISH) in cell block preparation using the cell line.

Methods

The normal human mesothelial cell line (Met-5A) was used. Cells were collected after washing with PBS, and suspended in 0.9% NaCl normal saline solution with 4mg/dL BSA (albumin from bovine serum) to closely resemble effusion microenvironment. Cell block was prepared by formalin superposition method. The variation of Formalin fixation condition was as follows. 1) Fixing solutions; 10% neutral buffered formalin (NBF), 10% non-buffered formalin or 20% non-buffered formalin. 2) Delay to fixation time; stored at room temperature or 4℃ for 0h, 2h, 4h, 8h, 24h, or 48h before fixed. 3) Fixation time; 24h, 72h, 1week or 2 weeks. After embedding in paraffin, the above samples examined respectively by FISH using *p*16/CDKN2A gene probe. Presence of the following factors were observed in each sample. 1) Non-uniform unscorable weakly signal. 2) Decrease or loss of signal. 3) Non-specific signal over nuclei and cytoplasm (autofluorescence or background obscures signal).

Results

The sufficient intensity of signals could be detected in over-fixation samples longer than 72h, however, decreased the number of signals especially *p*16 gene (red signals). Specimens left for longer than 4h in room temperature before fixation tended to induce autolysis and increase non-specific background signals. Moreover, intensity and number of true signals clearly reduced with the passage of time.

Conclusion

Compared with prolonging fixation time, delaying formalin fixation has more serious negative effects on FISH result in cell block. We recommend to perform formalin fixation as immediately as possible, and not to leave specimens at room temperature.

Comparison of three different cell block preparations for malignant body fluid specimens

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Objective

The cell block (CB) in non-gynecologic cytopathology has gained significance because of its pivotal role in molecular diagnosis and ancillary studies. There are 3 benefits of cell block: it could capture all of the material in malignant body fluid specimens, obtain the highest cellular yield including tissue fragments and free-floating single cells, and preserve the cytomorphology and architecture. CB enables the cytopathologist to know additional cytomorphologic specimen detail including the architecture of the lesion. Most importantly, they allow the evaluation of immunocytochemistry to improve diagnostic accuracy.

Aims

To investigate and find out the best method from three different cell block preparations for malignant body fluid specimens.

Materials and Methods

We analyzed the cytologic findings of pleural effusion and ascites specimens from 35 adenocarcinoma cases using 3 different cell block preparations: 95% alcohol, HistoGel (HG) and Gelfoam technique. Two cytopathologists blindly evaluated H&E and IHC sections of the 105 cell blocks from 35 specimens, and scored them on a scale of 0 (suboptimal, worst) to 3 (optimal, best) evaluating cellularity, cell distribution, morphology, background, pellet size, and overall quality. Averages were then obtained and compared with each of the preparation method.

Results

Our study illustrates that if the specimens are not fixed, the cells cannot concentrate. The staining results show that the method of 95% Alcohol makes chromatin well revealed in H&E stain, but pale in IHC stain. The methods of HG and Gelfoam show a better staining intensity in IHC stains than 95% Alcohol. In HE stain, the cellularity of HG is better than Gelfoam, and the background of Gelfoam disturb the interpretation. The results indicate that the HG technique succeeded in achieving the goals of capturing all the free-floating cells, preserving the cytomorphology and architecture, and better staining results.

Conclusion

Based on our data and technique, we found that it is important to fix the specimens with 10% formalin or cytorich red fixative or 95% alcohol before doing the cell blocks. When there is only a little residuel specimen, doing a cytospin would be better than a cell block.

Usefulness of liquid-based cytology for the diagnosis of oral squamous cell carcinoma — Comparison of conventional method and liquid-based cytology

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Objective

Since oral squamous cell carcinoma (OSCC), which represents the greater part of the malignant tumors occurring in the oral cavity, often has hyperkeratosis. This makes it harder to obtain enough cells for the cytological diagnosis on the smear, and this sometimes makes it difficult for us to diagnose. When we observe atypical cells of basal type or cancer pearls in the specimen, it becomes easier. In this study, we focused on some features to be the basis of OSCC such as keratinized superficial atypical cells, cancer pearls and basal type atypical cells. We aimed to evaluate the usefulness of liquid-based cytology (LBC) for the diagnosis of oral lesions with malignant suspicion by comparing the conventional method and LBC.

[Materials and Methods

Samples collected from 25 patients were underwent cytological and pathological testing, and were pathologically diagnosed with oral intraepithelial neoplasia (OIN) and OSCC at the department of oral surgery in Iizuka Hospital. Conventional smears were prepared first, using interproximal brush device. Then the brush, containing the residual material, was immersed in a preservative fluid (TACAS Ruby®). Both slides were stained by the Papanicolaou method. We investigated whether keratinized atypical cells, cancer pearls and basal type atypical cells appeared in the specimen or not. Fisher's exact test was used to compare differences between the conventional method and LBC specimen using split-sample. When the P-value <0.05, the difference was regarded as statistically significant.

Results

Cytological diagnosis by the conventional method was positive in 23/25 cases, negative in 1/25 case and inadequate in 1/25 case. Cytological diagnosis of LBC method was positive in 25/25 cases, nothing for negative or inadequate case. In the conventional method, keratinized atypical cells, cancer pearls and basal type atypical cells were observed in 23/25, in 3/25, in 11/28 cases, whereas in LBC method, they were in 24/25, in 8/25, in 18/25 cases. The frequency of basal type atypical cell was significantly higher in LBC as compared to the conventional method (P=0.04).

Conclusion

As for the results of the current study, it was expected that the LBC improved the diagnostic precision of oral brush cytology because of being excellent for detecting the atypical cells in the oral cavity.