

18G

1

2

: 18G

: 2001 5 2005 10 18G

35

(

)

: 35

36

가

)

(

가

97%(35/36)

,

94%(34/36)

33

,

1 (3%)

:

가

가

(6, 12).

CT MRI

CA19-9

가

가

(1, 2).

, 18G

가

가

(3, 4).

, CT,

, , ,
가

(5-7).

2001 5

2005 10

36

(7-11).

가 가

35

1

가

CT

(7, 8)

가 23

,

12

60

(14-83).

(9-11).

SSA 260A (Toshiba, Tokyo, Japan)

0.5% 3%

iU22 (Philips, Eindhoven, Netherland) , 3.75

MHz(SSA 260A) 2-5 MHz(iU22)

1

2

2007

2007 7 13

2007 11 7

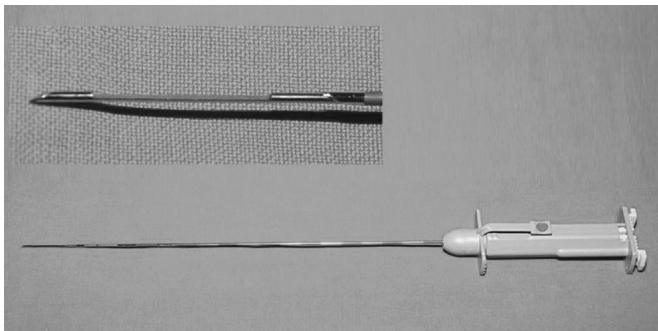
가

(needle biopsy guide attachment)

SHS - 1820 G (M.I.Tech, Seoul, Korea)
18 G, 20 cm
(Fig. 1).

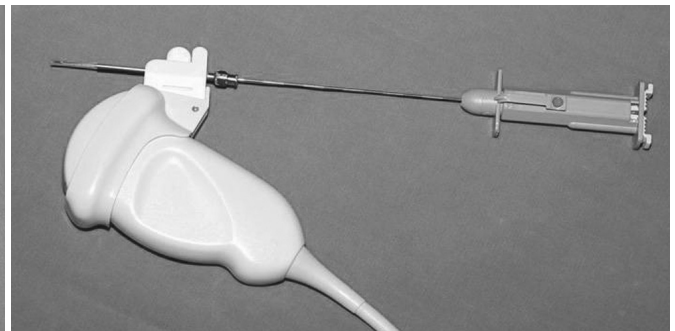
2
가
1
(acquisition rate)
(diagnostic accuracy)
가
3
1 2
가
7
7
CT
4 2.1 1 28 1
45
3
34 1

CT 가 가
34 32
25 , 가 2
(poorly differentiated neuroendocrine carcinoma,
small cell carcinoma) 1 , 1
(variant of adenocarcinoma, WHO 2002
classification) 가 3
가 1 (Fig. 2).
가 18 (50%),
가 17 (47%), 가 1
(3%)
가 1 34
39 mm (20 - 80 mm)
13 (8 - 20)
1 36 35
가
97% 34
94% 2
가 1 55 mm
(adenosquamous carcinoma)
1
25 mm
가 가 3
가 가 3
2 가 1
(needle tract implantation) 1
가
(Fig. 3).



A

Fig. 1. A. Photograph of the 18G high-speed core needle biopsy gun. Note the side notch of the inner trocar ('tru-cut'-type) on the magnified photograph of the needle tip.



B

B. Photograph of the biopsy gun placed in the needle biopsy guide attachment mounted on the 2 - 5 MHz transducer.

가 가 . 가
(7 -

11).

83% 94% ,

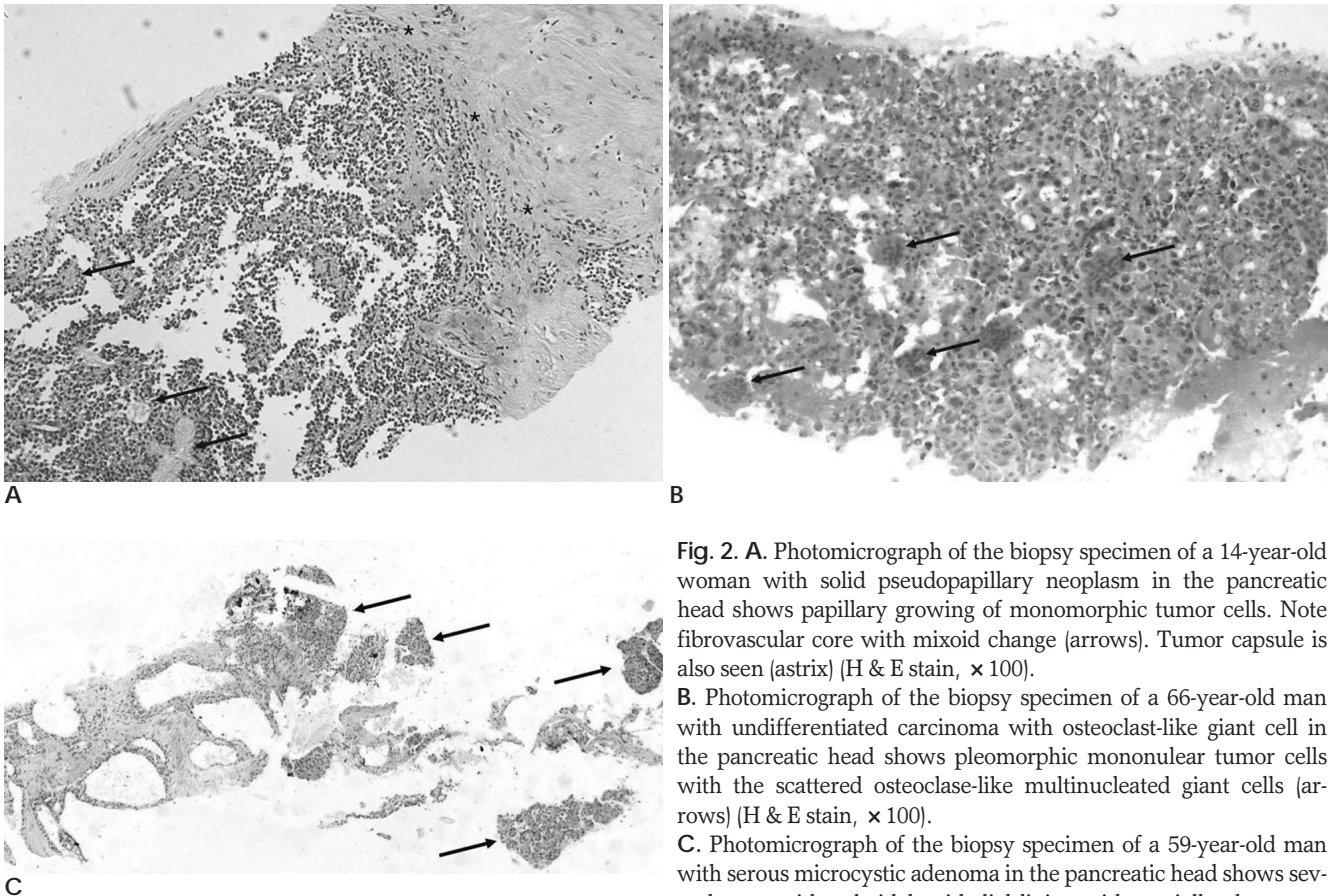


Fig. 2. A. Photomicrograph of the biopsy specimen of a 14-year-old woman with solid pseudopapillary neoplasm in the pancreatic head shows papillary growing of monomorphic tumor cells. Note fibrovascular core with mixoid change (arrows). Tumor capsule is also seen (astrix) (H & E stain, $\times 100$).

B. Photomicrograph of the biopsy specimen of a 66-year-old man with undifferentiated carcinoma with osteoclast-like giant cell in the pancreatic head shows pleomorphic mononuclear tumor cells with the scattered osteoclast-like multinucleated giant cells (arrows) (H & E stain, $\times 100$).

C. Photomicrograph of the biopsy specimen of a 59-year-old man with serous microcystic adenoma in the pancreatic head shows several cysts with cuboidal epithelial lining with partially clear cytoplasm and normal pancreatic tissue (arrows) (H & E stain, $\times 40$).

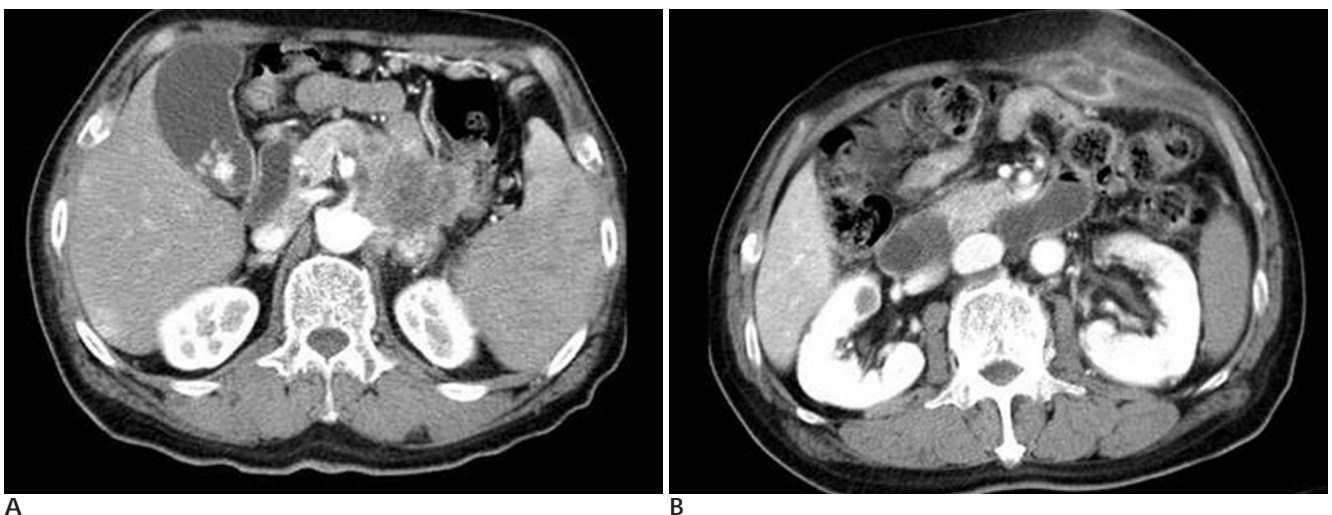


Fig. 3. Abdominal CT scan of a 75-year-old man with needle tract implantation from adenosquamous carcinoma of the pancreatic tail.

A. Initial CT scan shows a primary mass in the pancreatic tail.

B. Follow-up CT scan 1 month later after the second biopsy shows metastatic masses in the abdominal wall along needle tract.

Table 1. Results of Percutaneous US-Guided Fine-Needle Aspiration for Cytologic Examination

Reference (No.)	No. of Patients	No. of Biopsies	Acquisition Rate (%)	Sensitivity (%)	Specificity (%)
Glenthøj A, et al (10)	57	3	89 - 93	77 - 91	100
Chagnon S, et al (13)	19	1 - 3	83	83	100
Edoute Y, et al (14)	39		86	94	100
Lencioni R, et al (15)	34	2.8	91	81	100
Di Stasi M, et al (16)	510	1.5 - 1.8	94	87	100

Exclude inadequate specimens in the calculation of sensitivity and specificity

No.: Number

Table 2. Result of Percutaneous US-Guided Core Biopsies for Histologic Examination.

Reference (No.)	Needle Size in G	No. of Patients	No. of Biopsies	Acquisition Rate (%)	Sensitivity (%)	Specificity (%)
Glenthøj A, et al (10)	21 - 22	57	3	81 - 82	79 - 80	100
Lencioni R, et al (15)	21 - 22	34	2.8	85	92	100
Solmi L, et al (17)	21 - 22	50	2	76	100	100
Brandt KR, et al (5)	16 - 22	58			94	100
Di Stasi M, et al (16)	21 - 22	510	1.5 - 1.8	96	94	100
Own results	18	36	2	97.4	97	100

* : Include inadequate specimens in the calculation of sensitivity and specificity

No.: Number

81% 94% (10, 13 - 16)

(Table 1).

가 .

가

Table 2 (5, 10, 15, 17). Stasi (16) 7

100%

(5, 7, 12).

510

0.5 - 3.0%

(6, 8, 12, 19). 18G

가

94%, 96%, 97%

87%, 94%, 94%

가

가

97.4%

97%

1

가

가

가

가

(20 -

가 22)

(5, 6).

가

CT

가

가

. Zech (8)

CT

(desmoplastic

81%, 78.1%

reaction)

가

가

가 가

가

(18).

가

CT

1

CT

18G

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The Efficacy of an Ultrasound-guided Core Needle Biopsy with an 18G Cutting Needle for the Diagnosis of Pancreatic Diseases¹

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Purpose: The objective of this study is to evaluate the efficacy and safety of an ultrasound-guided core needle biopsy with an 18G cutting needle in patients suspected of having a pancreatic disease by analyzing the diagnostic performance and complication rate.

Materials and Methods: The study population comprised 35 consecutive patients who underwent an ultrasound-guided core needle biopsy using a high-speed biopsy gun accompanied with an 18G cutting-type needle between May of 2001 and October of 2005. The diagnostic performance (i.e., the acquisition rate and diagnostic accuracy) and complications associated with core needle biopsies were evaluated for its efficacy and safety.

Results: Thirty-six sessions of ultrasound-guided core needle biopsies were performed in 35 consecutive patients. All patients, except two (serous cystadenoma and autoimmune pancreatitis) were diagnosed with various subtypes of pancreatic cancer. The acquisition rate and diagnostic accuracy were 97% (35/36) and 94% (34/36), respectively. A complication occurred only in one patient (3%), which further proved to be a delayed complication (i.e., needle tract implantation).

Conclusion: According to our findings, the ultrasound-guided core needle biopsy is a viable and safe method for the diagnosis of pancreatic diseases. Moreover, it enables the diagnosis of the pancreatic cancer subtype.

Index words : Pancreas
Ultrasonography
Pancreas neoplasms
Biopsy, needle

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