

*, †

* †

: : 2002 3 가 14 gauge 가 : 49 100%	3 2003 8 55 18 gauge 38 47 55	8 가 가 49 89% (49)	5~6 11 가 6 96%	† 90%, 가
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가 1.2%

21,22)

(incisional biopsy)

16% 8.2%

:
 1-10

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* 2003

* 2003

(fine needle aspiration biopsy)
(core needle biopsy)

3,4,5,6,30)

35

9
가

4

(mesenchymal)

가

Lawrence

1983

1984

3457

9%

(Real-time)

¹⁹⁾ 1999

40%

14 gauge 18
(automated biopsy guns)

³³⁾

gauge

5~6

(Fig.1).

가

(fluoroscopy)

(CT)

(MRI)

5

가

가

가

(Fig. 2).

(fine needle aspiration biopsy)

(core needle biopsy)

^{1,2,20)}

(core needle biopsy)

^{5,6,12,15)}

2002 3

2003 8

가

55



Fig. 1. Biopsy needle, automated gun and attachment for ultrasound.

4 um
and eosin)

HE (hematoxylin

(, ,)

가 35 49

가

55

6

가 가

14

가

가 27

(Table 1).

2 cm 23 cm(6.2 cm)

. 2 cm

(re-open biopsy)

가 6

4

55

35

(Table 2),

20 (Table 3).

가 6



Fig. 2. Predrawing to minimized tumor contamination.

Table 1. Sites of sonographically guided biopsy in the 55 patients

Location	No. of Patients
Upper extremity	19
Scapula	1
Arm	6
Shoulder	4
Hand	2
Wrist	4
Forearm	2
Lower extremity	27
Thigh	12
Leg	8
Femur	2
Tibia	1
Foot	2
Knee	2
Neck	2
Pelvis and buttock	5
Trunk	2

Table 2. Final diagnosis in the 35 patient who had benign lesion

Diagnosis	No of Patients
Benign bone lesion	5
Aneurysmal bone cyst	1
Giant cell tumor	1
Eosinophilic granuloma	2
Fibrous dysplasia	1
Benign soft tissue tumors	22
Lipoma	9
Ganglion	4
Fibromatosis	1
Schwannoma	2
Leiomyoma	1
Calcifying fibroma	1
Hemangioma	3
Epidermoid cyst	1
Infectious disease	8
Abscess	2
Chronic inflammation	6

49 (89%)
 (20)
 (29)
 49 47 가
 96% 가
 90% 100%
 100% 94% (Table 4).
 20 (automated biopsy guns)
 (fluoroscopy)
 CT
 1931 4,11,14,31)
 10)
 가 9,18,24,35)

Table 3. Final diagnosis in the 20 patients who had malignant lesion

Diagnosis	No. of Patients
Malignant bone tumors	8
Osteosarcoma	3
Chondrosarcoma	3
Chordoma	2
Malignant soft tissue tumors	7
Liposarcoma	2
MFH	2
Rhabdomyosarcoma	2
Metastasis	5

color doppler

CT

8,25,32)

가

4,18,25)

30)

Table 4. Diagnostic Accuracy of Sonographically Guided Core Needle Biopsy

Parameter*	n	%
Accuracy	47/49	96
Sensitivity	18/20	90
Specificity	29/29	100
Positive predictive value	18/18	100
Negative predictive value	29/31	94

* Accuracy indicates correctly malignant+correctly benign/all biopsies; sensitivity, correctly malignant/all patients with malignancies; specificity, correctly benign/all patients with benign conditions; positive predictive value, correctly malignant/correctly malignant+falsely malignant; and negative predictive value, correctly benign/correctly benign+falsely benign.

가 가
 3). (pseudocap
 sule) 가
 4,5).
 1%
 5,6,11,26,34) 가
 7).
 (biopsy tract) 가

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22).
 13,27) CT
 23).
 가 (blastic)
 가
 3).
 21).
 가
 35).
 가 49 47
 97%
 가
 가

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Ultrasound-guided Core Needle Biopsy in Diagnosis of Soft Tissue Masses

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Purpose: To determine the utility of sonographically guided percutaneous core needle biopsy to diagnose musculoskeletal soft tissue masses.

Methods: A prospective study was performed in 55 patients referred for image-guided needle biopsy of primary or recurrent soft tissue masses and bone lesion or suspected solitary metastasis with extraosseous masses. Tissue samples were obtained with a 14-gauge or 18-gauge cutting needle coupled to an automated biopsy device under local anesthesia and sonographic guidance. Statistical analysis was based on 49 biopsies confirmed by successful clinical treatment (11 cases) or surgical resection (38 cases).

Results: An accurate diagnosis was obtained in 47 (97%) of 49 biopsies; sensitivity was 95%, and specificity was 100%. The method did not yield sufficient tissue to establish a diagnosis in 6 cases. Considering all 55 biopsies, high-quality specimens were obtained in 87%. There were no serious complications.

Conclusions: Sonographically guided core needle biopsy is accurate and safe, in soft tissue masses and bone tumors with extraosseous masses in the appendicular skeleton. In such patients, the sonographically guided procedure is the most prompt and effective method for obtaining tissue samples.

Key Words: Ultrasound, Needle biopsy, Soft tissue, Mass

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