



Table 1. Summary of CT-guided Percutaneous Biopsy of Spine and Paravertebral Lesions in 23 Patients

Case No/ Age/Sex	Clinical Diagnosis	Biopsy Site	Approach	Pathologic Results
1/68/M	Tuberculous spondylitis	L3 pvs	Posterolateral	Gram(+) staphylococcus aureus in culture
2/35/M	Tuberculous spondylitis	L4 body	Transpedicular	Chronic granulomatous inflammation
3/40/M	Tuberculous spondylitis	L2 body	Posterolateral	Chronic granulomatous inflammation
4/31/F	Tuberculous spondylitis	L2 body	Posterolateral	Chronic granulomatous inflammation
5/50/F	Tuberculous spondylitis	L4 body	Transpedicular	Chronic granulomatous inflammation
6/73/M	Pyogenic spondylitis	T12 body	Posterolateral	-hemolytic streptococcus group D in culture
7/61/M	Pyogenic spondylitis	L3 pvs	Posterior	Chronic inflammatory cell
8/59/F	Pyogenic spondylitis	L5 body	Transpedicular	Chronic inflammatory cell
9/75/M	Pyogenic spondylitis	L3 body	Posterolateral	Blood clot
10/10/F	Butterfly vertebra	T12 body	Transpedicular	Normocellular marrow
11/72/F	Old compression fracture	T12 body	Posterolateral	Blood clot
12/68/F	Old compression fracture	T11 body	Posterolateral	Normocellular marrow
13/53/M	Old compression fracture	T8 body	Transpedicular	Multiple bony necrosis
14/56/M	Discitis	L2 body	Posterolateral	Granulocyte and many inflammatory cell
15/48/M	Hemangioma	T8 body	Transpedicular	No malignant cell, bony necrosis
16/60/M	Metastasis	T11 body	Transpedicular	Metastatic carcinoma from prostate
17/55/M	Metastasis	L2 body	Posterolateral	Metastatic renal cell carcinoma
18/54/F	Metastasis	L2 body	Transpedicular	Metastatic adenocarcinoma
19/39/F	Metastasis	L4 body	Posterolateral	Metastatic carcinoma from breast
20/41/F	Metastasis	T3 body	Transpedicular	Metastatic adenocarcinoma
21/54/F	Metastasis	C3 pvs	Posterior	Undifferentiated carcinoma of neuroendocrine origin
22/29/F	Metastasis	T4 body	Transpedicular	Multiple myeloma
23/54/F	Multiple Myeloma	L4 body	Posterolateral	Multiple myeloma

pvs: paravertebral soft tissue

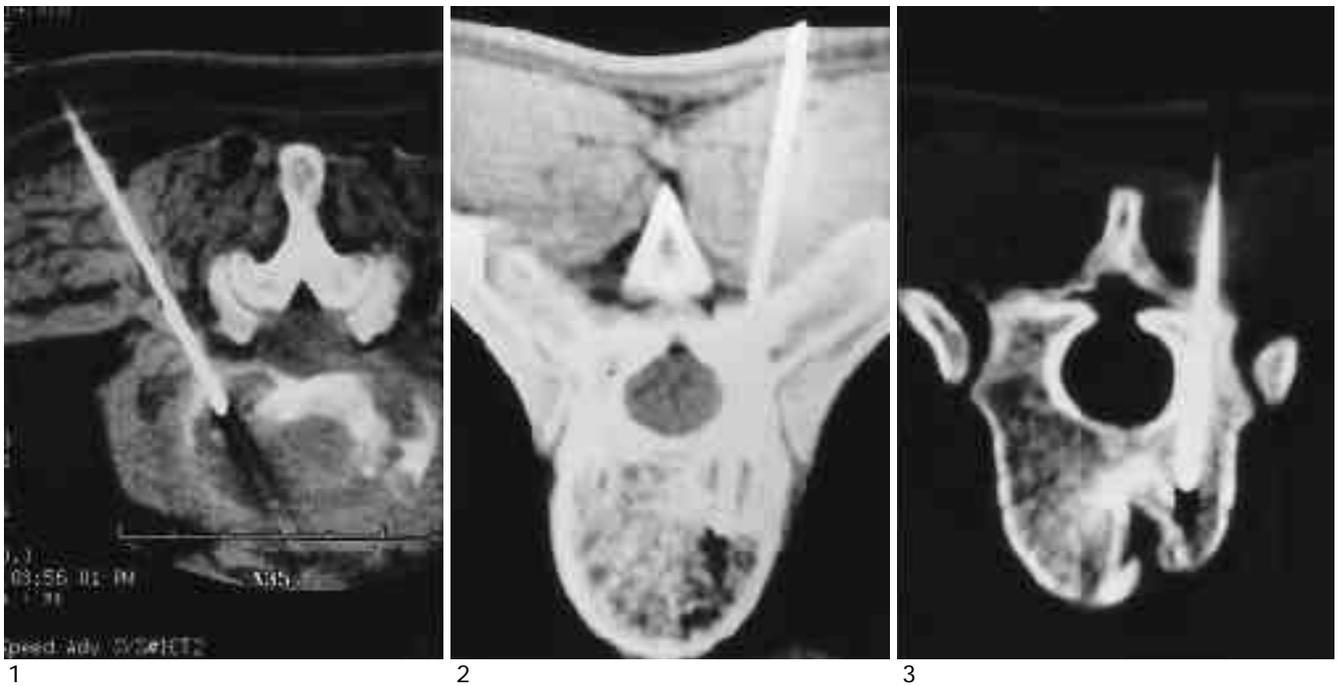


Fig. 1. Posterolateral approach to L2 vertebral body in the patient with suspected discitis. The needle traversed obliquely in the vertebral body, passing lateral to the right transverse process. Pathologic result was some granulocytes and many inflammatory cells.

Fig. 2. Transpedicular approach to L1 vertebral body in the patient with suspected hemangioma. The needle passed through the right pedicle and the needle tip was located within the vertebral body.

Fig. 3. Ten-year-old girl. CT scan shows midsagittal cleft and soft tissue interposition in T7 vertebral body suggestive of butterfly vertebra. Pathologic result was normal marrow cells.

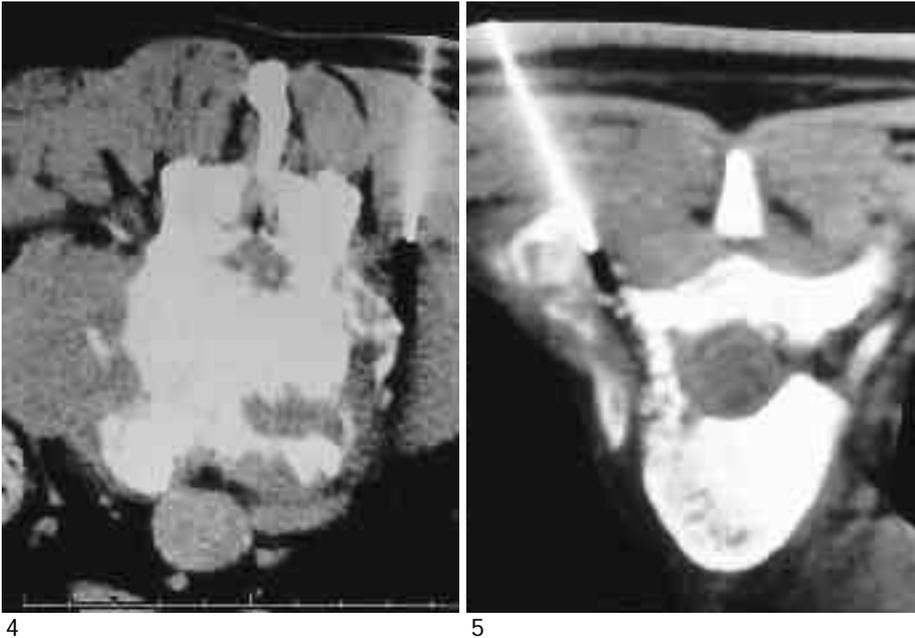


Fig. 4. In 67 year-old-man diagnosed as tuberculous spondylitis in the initial diagnosis, staphylococcus aureus grew in specimen obtained through biopsy. Tissue diagnosis confirmed pyogenic spondylitis.

Fig. 5. In 30 year-old woman with back pain and lower leg weakness, CT scan shows soft tissue mass in left posterior compartment of T4. Tissue diagnosis confirmed multiple myeloma.

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## Diagnostic Usefulness of CT-guided Percutaneous Biopsy of the Spine<sup>1</sup>

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**Purpose :** To evaluate the diagnostic value of CT-guided percutaneous biopsy of inflammatory and tumorous lesions of the spine and paraspinal soft tissue.

**Materials and Methods :** Twenty-three patients underwent CT-guided percutaneous biopsy of the spine and paraspinal soft tissue. Tentative clinical diagnoses determined before biopsy were tuberculous spondylitis (n= 5), pyogenic spondylitis (n= 4), butterfly vertebra (n= 1), old compression fracture (n= 3), discitis (n= 1), hemangioma (n= 1), metastasis (n= 7) and multiple myeloma (n= 1). Biopsy was performed at the following levels: cervical-(n= 1), thoracic-(n= 9), and lumbar-spine(n= 13). The approach to biopsy of the spine and paraspinal soft tissue lesions was posterolateral (n= 11), posterior (n= 2), or transpedicular (n= 10).

**Results :** Tissue considered adequate by the pathologist involved was obtained in 21 (91%) of the 23 cases. In 19 cases, pathologic findings supported the clinical diagnoses determined before biopsy. In two cases, pathologic and clinical diagnoses differed. Complications such as severe pain, bleeding, infection, neurologic deficit or damage to internal organs were detected neither during or after the procedure.

**Conclusion :** CT-guided percutaneous biopsy is a safe and reliable method of obtaining a diagnosis in many cases involving different spinal and paraspinal lesions.

**Index words :** Spine, biopsy

Computed tomography (CT), guidance

Spine, diseases

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