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HISTIOCYTOSIS X

IX. Fine needle aspiration biopsy for differentiation between histiocytosis X and spondylitis

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In patients with histiocytosis X and an atypical clinical course, repeated biopsies have been recommended as an important diagnostic procedure (FREDERIKSEN & THOMMESEN 1978). In typical cases, however, new bone lesions are commonly accepted as an extension of the disease (DAHLIN 1978).

For initial lesions localized to the spine it may be difficult or impossible to differentiate between histiocytosis X and Ewing's sarcoma, which may simulate vertebra plana (POULSEN et coll. 1975). This has led the present authors to perform fine needle aspiration biopsies in all cases of vertebra plana. With the present experience, it is possible quite safely to differentiate cytologically between histiocytosis X and small cell malignant tumours (THOMMESEN et coll. 1978).

However, histiocytosis X can apparently also mimic infectious diseases (THOMMESEN et coll. 1983). The purpose of the present investigation was to evaluate the diagnostic value of aspiration biopsy in patients with possible histiocytosis X or spondylitis.

Material and Methods

A series of 35 patients, 6 with clinically possible histiocytosis X or spondylitis, and 29 with possible spondylitis was reviewed. Specimens from solitary lesions in the spine had been taken under fluoroscopy by means of fine needle aspiration biopsy. Smears had been air-dried and stained with the May-Grünwald-Giemsa method. Material was also sent in for bacterial culture. For each case, a clinical follow-up as well as histopathology slides from biopsy or autopsy material were available and could be correlated with the cytologic data.

Results

The bone lesions were distributed in the cervical region in one case, the thoracic column in 15, and the lumbar region in 19 cases. The tentative diagnoses and cytologic reports appear from the Table. In the 6 patients with histiocytosis X the smears were dominated by histiocytic cells. Of the patients with possible spondylitis one female had a retroperitoneal carcinoma invading the lumbar spine (also confirmed by surgical biopsy). Otherwise, the smears were dominated by osteoblasts and osteoclasts, and cells from bone marrow and blood. In 10 cases the leukocytic infiltration was so predominant that the cytologic report suggested spondylitis. In the remaining 18 cases the cytologic report only confirmed the presence of benign non-neoplastic cells. In 17 cases, material was sent for bacteriologic culture and with a positive result in only 5 patients. In patients with histiocytosis X a typical clinical course with a follow-up for at least 3 years was

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regarded as confirmation of the diagnosis. In patients with spondylitis the confirmation was based on the relief of pain by immobilization and, in 21 of 27 patients, antibiotic treatment. In 24 patients the ESR declined during treatment and in 19 patients healing was noticed at radiography. In one patient the symptoms persisted after immobilization, probably due to a slipped disc. In one patient, mentioned previously, biopsy showed a malignant tumour.

The average follow-up period in patients with spondylitis was 12 months (range 1–60 months). No complications occurred after the fine needle biopsies, and pneumothorax was not observed.

Table

Tentative diagnoses and cytologic findings

	Histiocytosis X	Spondylitis
Tentative diagnosis	Tumour/spondylitis	Spondylitis
Number of patients	6	29
Cytology		
Benign	6	26*
Malignant		1
Blood		2

* One patient probably had symptoms from a slipped disc.

Discussion

As fine needle aspiration biopsy was used in this series the preliminary diagnoses relied on cytology alone. Several authors prefer biopsy with a thick needle or a punch instrument and regard the microscopic examination as superior to cytology (SCHAJOWICZ & HOKAMA 1976). This is probably true in a randomly selected series of patients (MURPHY et coll. 1981).

In the present analysis, fine needle aspiration biopsy was preferred because it has a very low complication rate, especially in the thoracic spine (DEBNAM & STAPLE 1975, EVARTS 1975). Furthermore, the nature of the examined bone lesions was suitable for fine needle aspiration biopsy (ROBERTSON & BALL 1935).

It must also be stressed that the diagnostic problems were quite specific in this series. When malignancy had been excluded the essential problem was to distinguish between histiocytosis X and spondylitis. Cytologic differentiation between histiocytosis X and malignant tumours has been discussed in detail elsewhere (THOMMESEN et coll. 1978).

The cytologic differentiation between spondylitis and histiocytosis X is more controversial. Histiocytosis X can be cytologically diagnosed quite safely, but in the case of spondylitis the cytologist will in most cases only report the occurrence of benign, non-neoplastic cells of different origins and he can only occasionally suggest the presence of an inflammatory process. It is also rare, that a positive bacterial culture will confirm the diagnosis of spondylitis (JACOBSSON 1982).

In the present series the final diagnosis was based on a combination of history, symptoms, laboratory and radiographic findings, and cytology. In two patients in whom spondylitis was strongly suggested and who had received treatment for this condition during several weeks, aspiration biopsy disclosed the true nature of the lesions, i.e. histiocytosis X and carcinoma. Fine needle aspiration biopsy is therefore to be recommended as an important and easy diagnostic procedure in selected cases with bone lesions in the spine.

SUMMARY

Fine needle aspiration biopsy was carried out in 35 patients with vertebral lesions in an attempt to differentiate between histiocytosis X and spondylitis. In 7 patients (6 with histiocytosis X and 1 with carcinoma) aspiration biopsy was of decisive diagnostic value. In 26 cases aspiration biopsy supported the diagnosis of spondylitis and in 2 patients no diagnostic information was obtained by aspiration biopsy. In selected cases of bone lesions in the spine, fine needle aspiration biopsy is recommended as an easy and important diagnostic procedure.

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