Tuberculosis of the cervix: cytology as an aid to diagnosis

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SYNOPSIS Two cases of tuberculous cervicitis are presented. The presence in cervical smears of both epithelioid and Langhans' giant cells, which are described, should raise a strong suspicion of tuberculosis.

Tuberculosis of the cervix is a late manifestation of the infection in the female genital tract. It is an unusual finding in the United Kingdom although not uncommon in areas where tuberculosis is still rampant, involving the cervix in 10% of patients with tuberculosis of the genital tract (Kirloskar *et al*, 1968). We describe the cytological appearances in cervical smears from two cases of tuberculosis of the cervix. These had similar characteristics which, when seen in cervical smears, should raise the suspicion of a tuberculous infection.

Case 1

A young Igbo woman from the East Central State of Nigeria was seen at the Mater Misericordiae Hospital in Afikbo on account of menorrhagia, being otherwise apparently in good health. The cervix was bulky, red, and friable, and the appearances strongly suggested carcinoma. A biopsy showed active tuberculous granulomata with early caseation and ulceration (fig 1). On treatment with streptomycin and isoniazid the cervix became clinically normal within a few months.

Case 2

A 43-year-old West Indian woman, resident in the United Kingdom for 17 years, presented at the Central Middlesex Hospital with a vaginal discharge. The cervix was severely eroded, the cervical smear showed atypical cells, and an urgent smear was requested. A second smear was taken at the gynaecological clinic where the cervix was considered to be clinically suspicious of malignancy.

The biopsy showed active tuberculosis with caseation and ulceration in both endo- and ecto-cervix (fig 2). The endometrial curettings and the biopsy of the endocervix showed acid-fast bacilli.

Five of the eight children of this patient were found to have had pulmonary tuberculosis 22

Fig 1 Case 1. Tuberculous granulation tissue causing ulceration of endocervix. Haematoxylin and eosin $\times 40$

Fig 2 Case 2. Cervix. Edge of tuberculous ulcer. H and E $\times 40$

Fig 3

Fig 3 Case 1. Cluster of epithelioid cells with ovoid and sausage-shaped nuclei and ill-defined pale eosinophilic cytoplasm in a background of inflammatory cells. Papanicolaou stain $\times 400$

Fig 4

Fig 4 Case 2. Higher magnification of epithelioid cells. Papanicolaou stain $\times 400$

months previously, but no evidence of tuberculosis in the father and mother had been found at that time. The patient has responded to streptomycin, isoniazid, and ethambutol.

Cytology

Cervical smears from both cases taken before treatment showed similar features. Scattered among the normal epithelial content of an inflammatory cervical smear, giving an impression of a second population of cells, were epithelioid cells, elongated cells with pale eosinophilic cytoplasm with indistinct cell borders. The nuclei were large, oval or elongated with a delicate chromatin pattern. These cells were often single or arranged in clusters (figs 3 and 4). It was these cells which gave rise to the report of atypical cells in case 2 and led to further investigation of the case.

Multinucleate histiocytic cells including some typical Langhans' cells were also present. They had large numbers of delicate, often ovoid nuclei, some overlapping, resembling those of histiocytes, arranged peripherally and often in horseshoe fashion in the Langhans' type. In case 1 the Langhans' giant cells were numerous, but only occasional giant cells were seen in case 2 (figs 5 and 6).

Discussion

Clinically, tuberculous cervicitis presents as superficial serpinous ulceration or as a bulky ragged

friable cervix resembling carcinoma. In case 1, carcinoma was suspected at the initial clinical examination and was clinically suggestive in case 2 when she was seen at the gynaecological clinic.

The epithelioid cells were a feature in both cases described here and in the cases reported by Coleman (1969) and Meisels and Fortin (1975). Highman (1971), in her description of smears from three women with tuberculous endometritis, stresses that the presence of epithelioid cells in smears obtained in the second half of the cycle should raise the suspicion of tuberculous endometritis. Nasiell *et al* (1972) noted similar epithelioid cells in sputum specimens with tuberculous chest infections and again emphasized that the appearance of these cells was likely to indicate an underlying tuberculous lesion. It seems that epithelioid cells, when seen in cervical smears, by their presence alone should prompt further investigation.

Langhans' giant cells are an arresting feature when they appear in smears, but on their own they are not diagnostic of tuberculosis, as similar multinucleate histiocytic giant cells can be found in postmenopausal smears and smears after radiotherapy (fig 7). That multinucleate histiocytic giant cells resemble the Langhans' giant cells seen in tuberculosis is not surprising, as both are formed by fusion of histiocytes, as was elegantly demonstrated by Mariano and Spector (1974). They differ from Langhans' cells by an even distribution of nuclei and more definite outline, and they sometimes contain phagocytosed debris. Other types of multi-

Fig 5 Case 1. Langhans' giant cell against a background of acute inflammatory cells. Papanicolaou stain $\times 125$; inset $\times 400$

Fig 6 Langhans' giant cell from case 2. Papanicolaou stain $\times 400$

Fig 7 Histiocytic giant cell from a postmenopausal smear. Papanicolaou stain $\times 400$

nucleate cells are easily distinguished. Those due to herpes virus show their epithelial origin and have smaller numbers of nuclei which show the characteristic crowding with moulding without overlapping, and may have eosinophilic inclusions in nuclei and cytoplasm (Riotton and Christopherson, 1973).

Syncytial trophoblastic giant cells are very rarely found in cervical smears. They can be round or irregularly shaped. The nuclei show coarse granular chromatin and are uniformly distributed or gathered together at an end of the cell lying in pale blue or amphoteric fluffy cytoplasm (fig 8).

Fig 8 Syncytio-trophoblastic cell—8 weeks' pregnancy. Smear from surface of aborted placental tissue. Papanicolaou stain $\times 400$

References

- Coleman, D. V. (1969). A case of tuberculosis of the cervix. *Acta cytol. (Philad.)*, **13**, 104-107.
- Highman, W. J. (1971). Cervical smears in tuberculous endometritis. *Acta cytol. (Philad.)*, **16**, 16-20.
- Kirloskar, J., Tulasi, P., and Vasantha, C. C. (1968). Tuberculosis of cervix (a study of 23 cases). *J. Obstet. Gynaecol. India*, **18**, 709-712.
- Mariano, M. and Spector, W. G. (1974). The formation and properties of macrophage polykaryons (inflammatory giant cells). *J. Path. Bact.*, **113**, (1) 1-19.
- Meisels, A. and Fortin, R. (1975). Genital tuberculosis: cytologic detection. *Acta cytol. (Philad.)*, **19**, 79-81.
- Nasiell, M., Roger, V., Nasiell, K., Enstad, I., Vogel, B., and Bisther, A. (1972). Cytologic findings indicating pulmonary tuberculosis. I. The diagnostic significance of epithelioid cells and Langhans' giant cells found in sputum or bronchial secretions. *Acta cytol. (Philad.)*, **16**, 146-151.
- Riotton, G., and Christopherson, W. M. (1973). *Cytology of the Female Genital Tract* (International Histological Classification of Tumours, No. 8). WHO, Geneva.