Correspondence

Necrotic granulomas of the urogenital system

Recently, Akosa and Boret\(^1\) described the condition of four patients who complained of menorrhagia which was treated by laser ablation of the endometrium. Treatment failed in these patients and hysterectomy was performed. Necrotic histiocytic granulomas were found in the endometria of all the four cases.

We have recently investigated nine similar hysterectomy specimens which were subjected to laser ablation of the endometrium (unpublished data, 1994, Aqel et al.). We found scattered histiocytes and/or multinucleated giant cells in the endometria of eight of the nine cases. Some of the histiocytes formed necrotic granulomas. In all cases histiocytes showed intracytoplasmic black and golden-brown pigment; in addition, residual endometria contained variable quantities of haemosiderin (Perl’s positive) which suggested past injury and haemorrhage in the basal layer of the endometrium.

We have also recently examined a urinary bladder biopsy specimen which was removed three months after diathermy resection of a transitional cell carcinoma. This biopsy specimen showed necrotic granulomas with deposition of intracytoplasmic black pigment (figure). The pigment in the hysterectomy specimens and in the bladder biopsy specimen was not birefringent and did not stain with haematoxylin, Perl’s (iron), Masson–Fontana (melanin), Gram (bacteria), or Ziehl–Neelsen (acid–alcohol fast bacilli). It seemed to be composed of non-degradable products of carbonized tissue, resulting from injury by laser or cautery.

Similar black or golden-brown “diathermy pigment”\(^6\) was reported following laser ablation or diathermy resection of endometrium and ovary.\(^7\) As histiocytic and granulomatous inflammation of the urogenital system can be a component of a wide range of pathological conditions including infections, infestations, and systemic diseases, such as sarcoidosis, it is important to recognise the presence of “diathermy pigment” and haemosiderin in these lesions. Such observations should prompt the histopathologist to consider the possibility of previous cautery or laser treatment, and so enquire further about the past surgical history. This will save unnecessary histological and clinical investigations to rule out infectious or systemic diseases.\(^8\)

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Endometrial microcarcinomas

Endometrial microcarcinomas are rare tumours which are polypoid lesions less than 1 cm in diameter and less than 5 mm thick, with an equal distribution between the functional and basal compartments of the endometrium\(^1\). Necrotic degeneration of the microcarcinomas is not uncommon, with widespread intranuclear grooves, multinucleation and eosinophilic cytoplasm. Necrotic microcarcinomas can be distinguished from non-neoplastic lesions such as residua after curettage, by the presence of nuclear atypia, mitotic activity, and a characteristic stromal reaction. Necrotic microcarcinomas may also be detected by cytology, as the malignant cells are often shed into the endometrial cavity and may form a cellular monolayer on the endometrial lining. The smear shows a characteristic cell morphology, with large, hyperchromatic nuclei and scant cytoplasm. Necrotic microcarcinomas are important to recognize, as they may be misdiagnosed as benign, and therefore not treated appropriately. In the past, necrotic microcarcinomas were often overlooked, as the diagnosis was not made until the patient presented with symptoms of bleeding or a pelvic mass. However, with the advent of fine needle aspiration cytology, necrotic microcarcinomas can be diagnosed in their early stages, and treated accordingly.

Section of bladder showing an area of the lamina propria with necrosis (right) surrounded by mononuclear histiocytes and multinucleated giant cells; some of these cells contain black pigment.

Occult papillary microcarcinoma of the thyroid: a potential pitfall of fine needle aspiration cytology? Is it possible to avoid it?

Harach et al.\(^2\) reported two cases of papillary microcarcinoma of the thyroid incidentally diagnosed by fine needle aspiration cytology (FNAC) of nodular goitres. Based on the thyroid aspirates, two small nodules were removed from both thyroid lobes and papillary carcinoma of the right thyroid lobe was diagnosed on cytology. The cytological diagnosis was an indication for thyroidectomy which was performed 14 months later. During surgery, two small nodules were detected in the right thyroid lobe, which were diagnosed as benign on examination of frozen tissue sections. Two additional small nodules were detected in the left lobe and subtotal thyroidectomy was performed.

Before paraffin wax sections were prepared, the smears taken from the right thyroid lobe were reviewed by a second experienced cytopathologist. The smears contained numerous benign follicular cells arranged in honeycomb sheets. Some of these cells had well defined eosinophilic cytoplasm (Hürthle cells). Amongst these benign follicular cells, there were a few groups of epithelial cells with overlapping round and oval, occasionally slightly irregular nuclei displaying chromatin grooves, prominent intranuclear vacuoles and small nucleoli. These cytological features are characteristic of papillary carcinoma and the diagnosis established by the first cytopathologist was confirmed.

Numerous samples were taken from both thyroid lobes for sectioning in paraffin wax, revealing two small adenomatoid nodules in the right thyroid lobe and two papillary microcarcinomas about 0.3 cm in diameter were discovered in both thyroid lobes. Had the papillary microcarcinoma not been incidentally detected by fine needle aspiration cytology the patient would have been treated by suppressive hormonal therapy and most likely would have avoided unnecessary surgery. Can such a false positive diagnosis be avoided?

When fine needle aspiration cytology is performed on palpable solid papillary carcinoma of the thyroid, smears are usually cellular and all or most of the cells display the morphological features of papillary carcinoma. We propose that false positive results may be avoided if repeat aspirations taken from the palpable nodule are negative for cancer cells.

Based on our observations in the future it may be possible to avoid such so-called false positive cytodiagnoses in some cases as suggested by Harach et al.\(^2\). Unfortunately, in their article Harach et al did not mention whether the histological features of papillary carcinoma were evaluated contained only cancer cells or whether the cancer cells were admixed with numerous benign follicular cells as mentioned above.

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Dr Harach comments:
Dr Woyke and colleagues raise the interesting point that it may be possible to separate needle biopsy specimens of papillary microcarcinomas from those of clinically significant carcinomas by the admixture of benign follicular cells in the specimen. In our own report of needle biopsy specimens diagnosed as papillary carcinoma, found on operation to be papillary microcarcinomas, both cases contained non-neoplastic follicular cells as well as the typical cells of papillary carcinoma. However, I have also seen numerous examples where needle biopsy specimens contained both non-neoplastic and neoplastic follicular cells, and at surgery a clinically significant papillary carcinoma was found. The proposal to use repeat aspirations is also difficult, unless there is proof that the aspirate is restricted to the nodule. A possible strategy would be to carry out a second biopsy with ultrasound, when the first biopsy of a palpable nodule produces abundant non-neoplastic follicles and a minor papillary carcinoma component.