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Pathology and physiopathology of adenomyosis

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Adenomyosis is defined by the presence of endometrial mucosa within the myometrium. This probably occurs by invagination of the basalis endometrium into the myometrium. The process of invagination and intramyometrial spreading may be facilitated by the non-cyclic, anti-apoptotic activity of the basalis associated with relative hyper-oestrogenic states. Most cases of adenomyosis are discovered in multiparous women during the 'transitional' years (40–50 years), and the condition is associated with menorrhagia, dysmenorrhoea, endometrial polyps and leiomyomata uteri. Endometrioid adenocarcinoma is often associated with adenomyosis, is frequently of early stage and low histological grade, is hormone-sensitive, and has an excellent prognosis. Extension of malignant growth into foci of adenomyosis has no adverse effect on prognosis. Definite diagnosis and treatment of adenomyosis are obtained by hysterectomy. Although adenomyotic endometrial glands are hormone-sensitive, exogenous progestogenic agents are ineffective for the treatment of adenomyosis. Anti-oestrogenic danazol and gonadotrophin-releasing hormone (GnRH) analogues induce suppression of adenomyosis, but their use must be of short duration. Surgical extirpation, therefore, is the best therapeutic option.

Key words: adenomyosis; hormone-sensitive; pathology; histogenesis; endometrial cancer.

DEFINITION

Adenomyosis is defined by the intramyometrial presence of endometrial mucosa (glands and stroma) surrounded by reactive, hypertrophic myometrium.

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MACROSCOPIC AND HISTOLOGICAL ASPECTS

Adenomyosis may be suspected macroscopically from a hysterectomy specimen. In such instances, adenomyosis causes globular and cystic enlargement of the myometrium with some cysts filled with extravasated, often haemolysed red blood cells and siderophages (Figure 1).[1] Microscopically, adenomyosis has a haphazard distribution within the myometrium, and by definition the ectopic endometrium must be located past the 'last' glands of the basalis. It is circumferentially surrounded by bundles of hypertrophic smooth muscle cells ('collar'). As a result, foci of adenomyosis are seen 2 mm or deeper in the myometrium or more than one microscopic field at 10×magnification from the endomyometrial junction (Figure 2). The latter measurement option is particularly useful in postmenopausal or gestational uteri in which periadenomyotic, muscular hypertrophy is attenuated to absent. The adenomyotic glands and stroma most often are of the proliferative type, but may contain secretory to menstrual changes. The stromal fibroblasts clearly differ cytologically from the adjacent smooth muscle cells (Figure 3).

Adenomyosis must be differentiated from the deep part of the endometrial mucosa that creeps superficially into the myometrium. This has implications for assessing the precise prevalence of adenomyosis, as mistaking intramyometrial basal mucosa leads to overestimation of the prevalence of adenomyosis.[2,3] Indeed, the diagnosis rates vary from 10 to 80% between pathologists, 12–58% between hospitals, and 20–67% at autopsy.[4,5] Also, the more sections taken from a given specimen, the higher the frequency. For example in one study, when three routine sections were taken, 31% of hysterectomy specimens contained adenomyosis and at six sections, the rate increased to 61%.[6] Using stringent diagnostic criteria—e.g. deeper than 25% of myometrial thickness—yields lower adenomyotic rates than if more

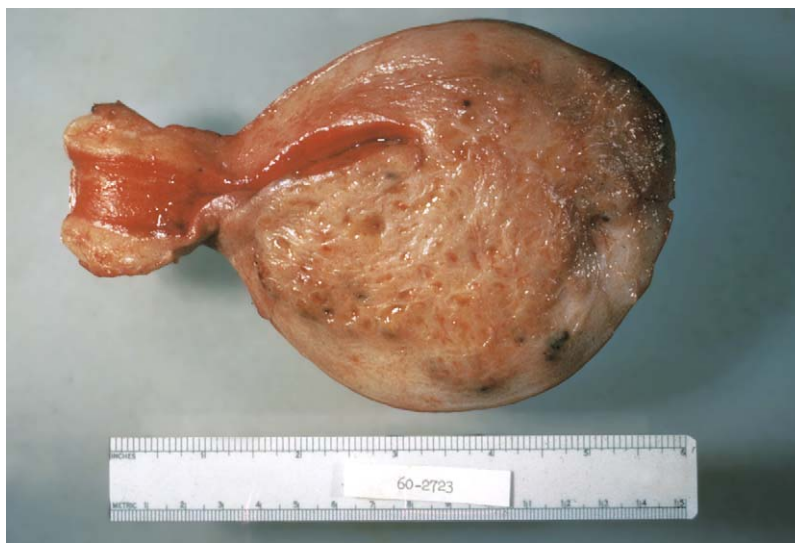

Figure 1. Diffuse adenomyosis of anterior wall of uterus. Note coarsely trabeculated, diffusely hypertrophied myometrium stippled with foci of ectopic endometrium. Original magnification×4. (Reproduced with permission from Ferenczy[3]).

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