

In the present case, the IUD did not extend outside the colon wall. Owing to the potential morbidity associated with bowel resection, the patient was treated conservatively. Because the IUD was in a fixed position, the risk of further migration and of infectious complications could be mitigated, given the integrity of the intestinal wall. Longer-term follow-up will determine whether such management is appropriate.

### Conflicts of interest

The authors have no conflicts of interest.

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## Endometrial fluid in postmenopausal women

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Fluid accumulation in the endometrial cavity is an important finding because it may suggest endometrial pathology, including endometrial cancer [1]. However, studies into the frequency and significance of accumulated endometrial fluid are conflicting [1–6]. Although some reports have included women undergoing postmenopausal hormone replacement therapy, information is limited regarding associated clinical problems such as hypertension and diabetes [2]. The aim of the present study was to provide additional information on the frequency and importance of endometrial fluid found in asymptomatic postmenopausal women.

The hospital records of 999 consecutive unselected asymptomatic postmenopausal women, including 31 (3.1%) women who had endometrial fluid found on transvaginal ultrasound, were retrospectively reviewed. None of the patients was undergoing postmenopausal hormone replacement therapy.

Patients with endometrial fluid found on ultrasound were older than the women who did not have endometrial fluid ( $57.3 \pm 8.4$  vs  $51.7 \pm 4.1$ ;  $P=0.003$ ); however, there was no difference in age at menopause between the 2 groups (Table 1). Mean parity was greater in women with endometrial fluid ( $3.5 \pm 1.8$  vs  $2.7 \pm 1.2$ ;  $P=0.02$ ). The percentages of patients with diabetes, hypertension, or both were all significantly higher in the women with endometrial fluid (Table 1).

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Patients who had endometrial fluid underwent endometrial curettage for histologic diagnosis. In addition, one woman whose ultrasound result suggested the presence of an endometrial polyp underwent a hysteroscopy and the polyp was resected. Four women whose histologic diagnosis was atrophic endometrium had cervical stenosis and 3 of these women had both diabetes and hypertension.

Histologic results for the asymptomatic postmenopausal women with endometrial fluid are presented in Table 2. The majority of women in the “Insufficient for diagnosis” group had a few fragments of benign-looking endometrial surface epithelium and separate small glands without stroma, suggesting prominent endometrial atrophy. Hence, endometrial thickness on ultrasound was thin in these patients.

The widespread use of transvaginal ultrasound allows reliable and detailed gynecologic assessment. Endometrial fluid accumulation can be demonstrated easily using transvaginal ultrasound; however, there is still no consensus regarding the clinical importance of the presence of endometrial fluid.

Different frequencies of intrauterine fluid accumulation, ranging from 1% to 14%, have been reported previously [4,5]. In the present retrospective analysis, endometrial fluid was present in 3.1% of asymptomatic postmenopausal women who were not undergoing hormonal therapy. Among these 31 women, only 1 had endometrial carcinoma. Our study is in accordance with the suggestion that endometrial thickness rather than accumulated fluid is a better

**Table 1**

Demographic characteristics of postmenopausal women found with and without endometrial fluid on transvaginal ultrasound. <sup>a</sup>

Characteristics	Women with endometrial fluid (n = 31)	Women without endometrial fluid (n = 968)	P value
Age, y	57.3 ± 8.4 [47–74]	51.7 ± 4.1 [40–71]	0.003
Menopausal age, y	45.9 ± 0.47	45.5 ± 0.99	0.735
Parity	3.5 ± 1.8	2.7 ± 1.2	0.02
Diabetes	9 (29.0)	78 (8.1)	<0.001
Hypertension	14 (45.2)	261 (27.0)	0.026
Diabetes and hypertension	6 (19.4)	52 (5.4)	0.001

<sup>a</sup> Values are given as mean ± SD [range] or number (percentage).

**Table 2**

Histologic results of the women observed with endometrial fluid on ultrasound (n = 31).

	Atrophic endometrium	Insufficient for diagnosis	Proliferative endometrium	Polyp	Chronic endometritis	Endometrial cancer
No. of cases	5	22	1	1	1	1
Mean endometrial thickness (single layer, mm)	2.1 ± 0.45	1.7 ± 0.49	2.5	2.1 <sup>a</sup>	1	7.5

<sup>a</sup> Only single layer endometrial thickness (the size of the polyp was excluded).

predictor of endometrial abnormality; the patient with endometrial cancer had an endometrial thickness of 7.5 mm. With the exception of 2 women in our study (1 with an endometrial polyp and 1 with endometrial cancer), the remaining women had symmetrical endometrial thickness on ultrasound.

The findings of endometrial cancer, endometrial polyp, proliferative endometrium, and endometritis in the present study may all cause obstruction at the level of the internal ostium of the cervix [3].

The women with accumulation of endometrial fluid were significantly older than the women without endometrial fluid. In addition, parity was significantly higher in women with endometrial fluid, which is in contrast to previous reports [2].

In conclusion, endometrial fluid observed using transvaginal ultrasound in postmenopausal women is unlikely to be a sign of malignancy unless the endometrium is thickened. Hypertension, diabetes, and multiparity may be associated with a higher risk of endometrial fluid accumulation in postmenopausal women and these findings should be investigated further.

### Conflict of interest

None.

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