Endometrial polyps are a common cause of bleeding in pre- and postmenopausal women and are difficult to differentiate from other causes of endometrial thickening using transvaginal sonography. Because treatment of the various entities resulting in endometrial thickening differs, improved evaluation of the abnormally thickened endometrium is helpful for patient treatment. The identification of multiple polyps as opposed to a single polyp is useful to the clinician performing subsequent hysteroscopic resection to ensure removal of all masses. The additional identification of associated endometrial thickening allows the gynecologist to perform dilatation and curettage at the time of polyp resection.

Procedure

All 20 women with pathologically proven endometrial polyps were initially scanned with transvaginal sonography (XP-10; Acuson, Mountainview, CA), which showed an abnormally thickened endometrium of 8 mm or greater. For premenopausal women, attempts were made to scan on days 4–6 of the cycle, when the endometrium is at its thinnest phase. Subsequent sonohysterography was performed as previously described [1]. Briefly, after cleaning the cervix, a sterile 5-French catheter that has been flushed with sterile saline to eliminate the air is then guided into the endocervical canal. The catheter is advanced past the external cervical os for a variable distance (usually 2–7 cm). The speculum (one with an open side-arm works best) is then carefully removed, allowing the catheter to remain in place. Transvaginal scanning is then performed during the instillation of sterile saline solution. With occlusive balloon catheters, a to-

Fig. 1.—Single polyp in 44-year-old woman who presented with excessive bleeding.
A, Sagittal transvaginal sonogram shows endometrium (arrows) in fundus. Thickness of endometrium is 10 mm.
B, Sagittal sonohysterogram shows single round 1.9-cm echogenic polyp (arrow). Note otherwise thin endometrium (2 mm).
tal of 5–10 mL of saline is usually sufficient, whereas straight catheters, with which cervical leakage is common, may require as much as 40 mL to keep the endometrial cavity distended long enough to obtain the necessary images for diagnosis. The examination usually lasts 5–10 min and is well tolerated by the patient. No complications were encountered in our patients.

Clinical History
Patients were 30–71 years old; 10 patients were premenopausal, and 10 were postmenopausal. Of the premenopausal patients, nine presented with abnormal bleeding and one with pelvic pain. Seven postmenopausal women presented with bleeding, one with pain, and one with abnormal findings on Papanicolaou’s smear suggestive of endometrial abnormality. One other postmenopausal woman was asymptomatic but was scanned to establish baseline endometrial thickness before initiation of hormonal replacement therapy.

Sonographic Findings
Transvaginal sonography revealed endometrial thicknesses of 8–29 mm, which did not correlate with patient age or number of polyps.
Sonohysterography of Endometrial Polyps

Fig. 5.—Broad-based polyp in 68-year-old woman who presented with postmenopausal bleeding. 
A, Sagittal transvaginal sonogram shows 8-mm-thick endometrium (arrows). 
B, Sagittal sonohysterogram shows 2-cm broad-based polyp (cursors).

Fig. 6.—Polyp and diffuse endometrial thickening in 44-year-old woman who presented with excessive bleeding. 
A, Sagittal transvaginal sonogram shows endometrium (cursors) with focal thickness of 10 mm. 
B, Sagittal sonohysterogram shows 11-mm polyp (arrow) and diffuse endometrial thickening (arrowheads) caused by hyperplasia.

Fig. 7.—Polypoid mass in 48-year-old woman who presented with excessive bleeding. 
A, Sagittal transvaginal sonogram shows endometrial thickening (cursors). 
B, Sagittal sonohysterogram shows polypoid and diffuse thickening (arrowheads) caused by hyperplasia only.
subsequently revealed at sonohysterography. Those with polyps plus additional hyperplasia shown on sonohysterography showed endometrial thicknesses of 10–26 mm on initial transvaginal sonography.

Sonohysterography revealed 10 cases of single polyps and 10 of multiple polyps (Figs. 1 and 2). Of the premenopausal women, four had multiple polyps and six had single polyps. The postmenopausal group included six patients with multiple polyps and four with single polyps. Polyp sizes ranged from 0.5 to 3.0 cm. The location of 32 distinct polyps revealed at sonohysterography included 11 fundal, five anterior, nine posterior, three right lateral, and four left lateral.

Most polyps were homogeneously echogenic, although five showed small cystic components of 2–3 mm and one had a 1-cm central cyst (Fig. 3). The polyps imaged in this study revealed a variety of shapes, ranging from round or oval to elongated and angular (Fig. 4), conforming to the shape of the endometrial cavity. Broad bases and thin stalks were seen, all with smooth surfaces (Fig. 5). The remaining endometria measured 1–4 mm in 14 cases and 5 mm in one case. The polyps of four patients with pathologically proven endometrial hyperplasia had measurements of 6, 8, 8, and 10 mm (Fig. 6). The polyps of two (50%) of the four patients with polyps and diffuse hyperplasia had cystic components.

**Differential Diagnosis**

Endometrial hyperplasia cannot be distinguished from an endometrial polyp on the basis of the transvaginal sonography findings alone because both entities are hyperechoic and may contain cystic components [2]. Sonohysterography is necessary to show the focal nature of the polyp as opposed to the diffuse endometrial thickening of endometrial hyperplasia although,
occasionally, a polypoid appearance may be due to hyperplasia alone (Fig. 7).

Differentiation of endometrial polyp from submucosal fibroid (Fig. 8) at sonohysterography is most effectively done by echotexture assessment and identification of an overlying echogenic endometrium. The classic submucosal fibroid is hypoechoic with shadowing and similar in texture to the myometrium with an overlying echogenic endometrium defining the subendometrial location. Because a submucosal fibroid may present almost completely within the endometrial cavity as does a polyp, location is not a reliable distinguishing feature.

Subendometrial pathology caused by diffuse adenomyosis or focal adenomyoma may be confused with endometrial polyp on transvaginal sonography alone (Fig. 9). The increasing number of patients on tamoxifen citrate therapy for treatment and prevention of breast cancer has resulted in an increasing incidence of endometrial polyps, carcinoma, and adenomyosis [3]. Sonohysterography is the most useful modality for visualizing the site of abnormality (subendometrial versus endometrial) by revealing the overlying endometrium with subendometrial cysts or, in the cases of adenomyoma, focal mass.

Blood clots may be quite difficult to distinguish from polyps because they may also be echogenic (Fig. 10). Attempts should be made to flush blood clots from the endometrial cavity during sonohysterography, although these attempts may be unsuccessful. Clots are often seen as multiple strands crossing the canal but also can be masslike. If possible, sonohysterography should not be performed when the patient is bleeding excessively because of difficulties in differential diagnosis; however, this may not be practical in patients who have been bleeding continuously for an extended period of time. Synechiae may also be echogenic but extend from wall to wall without a focal mass and usually can be identified on sonohysterography without confusion with endometrial polyp (Fig. 11).

Although none of the polyps in our study showed malignant foci, a small percentage (0.5–3%) [4] may contain adenocarcinoma (Fig. 12), and removal of polyps is therefore necessary for exclusion of malignancy as well as treatment of bleeding. Polyps may be difficult to distinguish from well-differentiated endometrial carcinoma. Obvious invasion of the underlying endometrium is consistent with malignancy, but less obvious invasion may not be appreciated on transvaginal sonography or sonohysterography. Endometrial carcinoma may be focal (versus polyp) or diffuse (versus hyperplasia) and may be quite inhomogeneous in echotexture. One recent study suggested that lack of distensibility of the endometrial canal during sonohysterography may be a sign of endometrial carcinoma [5]. Good technique using a balloon catheter to occlude the cervical os would therefore be essential in the differentiation of a nondistensible endometrial canal caused by carcinoma from poor distention caused by incomplete occlusion of a patulous cervical os.

References