Ultrasound Detects Pelvic Endometriosis

BY PATRICE WENDLING

HAMBURG, GERMANY — Transvaginal ultrasound is a useful method for detecting severe pelvic endometriosis and rectosigmoid involvement, according to a study of about 200 women.

Transvaginal ultrasound (TVS) is thought to be reliable for the diagnosis of ovarian endometriosis, but laparoscopy is still the standard for the diagnosis of pelvic endometriosis.

In a prospective, observational study of 201 women examined with TVS before undergoing laparoscopy for evaluation of pelvic pain lasting more than 6 months, 62 (31%) had no endometriosis at laparoscopy according to the revised American Fertility Association classification system, 33 (16%) had minimal disease, 31 (15%) mild, 27 (13%) moderate, and 48 (24%) severe disease, according to data presented at the World Congress on Ultrasound in Obstetrics and Gynecology. Percentages total less than 100% because of rounding.

With laparoscopy as the accepted standard, TVS had a sensitivity of 57% and specificity of 95% to diagnose the absence or presence of endometriosis, reported lead author Dr. Tom Holland of the Early Pregnancy and Gynecology Assessment Unit, University College London Hospitals.

The sensitivity and specificity to diagnosis absent to mild versus moderate to severe disease were 89% and 97%, and 85% and 98% for absent to moderate versus severe endometriosis. The positive and negative likelihood ratios for severe disease were 43.5 and 0.15, respectively.

"TVS performed by experienced operators has a high sensitivity and specificity at detecting severe pelvic endometriosis," Dr Holland said. "TVS is a good method for triaging women with pelvic endometriosis for optimal surgical care."

In a separate retrospective, observational study of 72 women, mean age 31 years, who had a bowel resection for presumed deep infiltrating endometriosis, preoperative TVS could detect deep infiltrating endometriosis of the rectosigmoid colon in 79% of cases, Dr. Dominique Van Schoubroeck reported during the same session at the meeting.

Deep endometriosis nodes were recorded by ultrasound as "yes" in 51 women, "possible" in 6, and "no" in 15 cases, with yes and possible cases considered abnormal. Histology reported deep nodes as present in 88% and absent in 12% of cases, said Dr. Van Schoubroeck, obstetrics and gynecology unit, University Hospitals, Catholic University Leuven, Leuven, Belgium. Accurate detection of nodes could help with surgical planning, she said.

Dr. Holland and Dr. Van Schoubroeck disclosed no conflicts of interest. ■

Abdominal Ultrasound Aids PCOS Diagnosis

BY MIRIAM E. TUCKER

NEW YORK — Ovarian volume assessed by transabdominal ultrasound correlated strongly with serum testosterone levels in a study of 39 adolescent girls undergoing evaluation for polycystic ovary syndrome.

While magnetic resonance imaging and transrectal or transvaginal ultrasound (TVUS) may better visualize ovarian follicles, transabdominal ultrasound (TAUS) is a less invasive, cheaper, and more readily available imaging modality to diagnose polycystic ovary syndrome (PCOS), Dr. Clare A. Flannery said in a poster presented at a joint meeting of the Lawson Wilkins Pediatric Endocrine Society and the European Society for Pediatric Endocrinology.

With TAUS, the ovarian volume—the sum of the stromal volume and multiple follicles—can be easily calculated from the three dimensions of the ovary. Elevation of serum testosterone, a well-validated diagnostic criterion for PCOS, has been shown to correlate with typical PCOS using TVUS but little is known about how accurately it relates to increased ovarian volume in TAUS, said Dr. Flannery of the department of endocrinology-internal medicine at Yale University, New Haven, Conn.

The 39 adolescents had a mean age of 15.3 years, a mean body mass index of 31.5 kg/m^2, and all had clinical features

suggestive of PCOS, for which they had been referred to the Yale Multi-disciplinary Adolescent PCOS Program, directed by senior author Dr. Tania S. Burgert.

They underwent TAUS that was read by a radiologist blinded to all clinical information. Ovarian volume was calculated with three diameter measurements, and total ovarian volume was obtained by adding the volume of both ovaries. They had a mean total ovarian volume of 23.2 cm^3 (range 2.5-50.2 cm^3), whereas the mean single largest ovary volume was 14.3 cm^3 (range 1.3-30.7 cm^3), indicating that asymmetrical ovarian enlargement was not uncommon, Dr. Flannery said.

Total testosterone levels correlated with both single largest ovary volume and total ovarian volume, as did free testosterone. When ovarian volume was analyzed on a continuum, adolescents whose ovaries were less than 10 cm^3 in volume had a 77% likelihood of a normal testosterone (less than 50 ng/dL).

Differences were seen between the 18 obese (BMI greater than 30), 12 overweight (BMI of 25-29.9), and 9 lean (BMI less than 25) patients. The overweight and obese groups had lower sex hormone–binding globulin than did the lean group (37 nmol/L and 27 nmol/L, respectively, compared with 66 nmol/L in the lean group). They also had greater insulin resistance, as measured by the homeostasis assessment model (5.1 and 3.3, compared with 2.0 in the lean group).

Total testosterone levels were not statistically different between the three BMI groups, although they trended higher in the obese group (mean total testosterone, 56 mg/dL). Everyone in the lean group had at least one enlarged ovary, as did slightly over half of the overweight and obese groups. Bilateral ovarian enlargement was present in 33%-44% of the girls in each group.

In an interview, Dr. Flannery said that the majority of the adolescent girls referred to their specialty clinic are obese with symptoms that may be consistent with signs of puberty, namely irregular periods and acne. It is a challenge to differentiate between girls with early or established PCOS versus girls with just obesity and insulin resistance. Examination of ovarian morphology provides another tool for diagnosis, she said.

Dr. Flannery stated that neither she nor Dr. Burgert had any financial disclosures. ■