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Reply: Hysterectomy and bilateral oophorectomy for severe premenstrual syndrome

Sir,

Dr Renkens’ letter is most interesting and exposes the controversy relating to the role of hormones and depression in women. Renkens has brought up one of the darkest periods in the history of our specialty—and something which is not known to the majority of gynaecologists and psychiatrists. This unholy alliance of the most distinguished members of our specialties is the subject of my address for the annual RCOG historical lecture in November of this year, and any relevance to current practice has recently been published (Studd and Panay, 2004).

Longo (1979), in his masterly account of the rise and fall of Battey’s operation, finally posed the question as to whether it worked or not. If we consider menstrual madness as severe PMS, and if we regard anovulation by GnRH analogues as the equivalent of a medical oophorectomy, then randomized trials strongly suggest that it did work (Leather et al., 1999). The trouble was that enthusiasm for the operation went beyond the bounds of humanity when it was performed for ‘all cases of lunacy’ and even for women who wanted to leave their husbands. In the right patients it would have cured menstrual mania but the mortality from the surgery and subsequent osteoporosis would certainly condemn the procedure.

As Dr Renkens states, Dr Dalton played a major role in making people aware of the syndrome of PMS and the dangers it posed to women’s health. Unfortunately, not one of her several treatments passes the test of scientific scrutiny. On the other hand, treatments which accept that the underlying cause of PMS is the hormonal changes that occur following ovulation, and that therefore rely upon removal of these changes by suppressing ovulation, are effective. Apart from the use of GnRH analogues, estradiol implants (Magos et al., 1986) and anovulatory doses of estradiol by patch (Watson et al., 1989) have been shown to be effective in placebo controlled trials.

If it were possible to perform a placebo hysterectomy, that might persuade the sceptics that the overwhelmingly beneficial effect was not due to the placebo effect of surgery. Isaacs in 1880 performed a sham oophorectomy in a patient with apparent cure, but the patient saw Hegan 1 year later, and he claimed that it was he who eventually cured her by removing the ovaries. It may interest readers to know that the normal ovariectomy was considered to be such an advance that Hegan strongly criticized ‘well meaning objectors who had put back German gynaecology by 20 years’. Never again, he wrote, should we allow German gynaecology to be overtaken by foreigners. Thus, the treatment was so new and promising that there was great academic and national pride at stake. We would suggest that cloning and stem cell research are the contemporary equivalents to what was seen as a major controversial development in surgery in the 19th century.

However misguided was the use of bilateral ovariectomy, there was at least some logic to it. There was no such logic to clitoridectomy, which was not performed for menstrual madness, nor was it ever performed by Marion Sims. But that is another depressing story.

Dr Renkens last paragraph claiming that medical and surgical treatment should be avoided in all cases makes me despair. A large number of women have their reproductive years destroyed by PMS and, if we are to alleviate their suffering, we are duty bound to forget our prejudices and consider the scientific evidence for all potential modes of treatment, whether this is psychotherapy, anti-depressants, treatments based upon anovulation and, in the rare appropriate cases, hysterectomy, bilateral oophorectomy and long term hormone replacement.

References

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Ovarian reserve and reproductive age may be determined from measurement of ovarian volume by transvaginal sonography

Sir,

We read with interest the recent paper by Wallace and Kelsey (2004) on the role of ovarian volume measured by
ultrasound in the assessment of female reproductive status. The authors linked ovarian volume to primordial follicle numbers, by arguing that ovarian volume declined with age in a similar way to total follicle numbers in the analysis of Faddy and Gosden (1996). Then they concluded that ovarian volume could thus be used instead of follicle numbers to predict reproductive potential. We feel that both the methodology used in the paper and the relative value of ovarian volume compared with other predictors of ovarian reserve are open to criticism.

First, our data on ovarian volume based on the studies by Scheffer et al. (2003) and those in Pavlik et al. (2000) that Wallace and Kelsey used, do not indicate much in the way of a declining mean before age 35–40 years, while follicle numbers decline from ~100,000 at age 25 to ~20,000 at age 40. So, predictions of reproductive potential based on ovarian volume should not differ by much more than chronological age at these young ages, and ovarian volume can be looked upon more as a late marker of ovarian ageing, much like basal FSH (Van Rooij et al., 2004). The applicability of ovarian volume as a test for ovarian reserve in survivors of childhood cancer might therefore be doubtful. Also, there is little change in mean ovarian volume after the age of 50 years, and Wallace and Kelsey’s predictions of ‘reproductive age’ do not seem to extend beyond age 50.4 years. This is curious as ~50% of women experience menopause after this age!

Second, Faddy and Gosden (1996) linked the age-dependent decline in (total) follicle numbers to age at menopause via a threshold number of follicles ‘triggering’ menopause. A similar methodology can be applied to data on ovarian volume, and our data (Scheffer et al., 2003) suggest a (mean) threshold ovarian volume of 4.38 cm³ (based on two ovaries) which is remarkably close to twice Pavlik et al.’s reported mean ovarian volume (based on a single ovary (Pavlik et al., 2000)) of 2.2 cm³ from post-menopausal women. However, just like Faddy and Gosden’s (1996) estimated menopausal threshold number of follicles, a threshold ovarian volume is not constant but will vary between women (median 4.1 cm³, and quartiles 3.3 and 5.2 cm³) so that predictions of reproductive potential based on ovarian volume will have additional uncertainties to those inherent to any indirect method.

Third, the methodology used by Wallace and Kelsey in constructing the predictions of ‘reproductive age’ is essentially based on percentiles of the distributions of (age-dependent) ovarian volume and menopausal age (at least for points A and B in their Figure 5) although the method is rather crude (e.g. straight-line segmented plots) and the use of a fixed point (C in their Figure 5), which has no interpretation in terms of percentiles, would seem rather peculiar. We have made similar percentile-based predictions of reproductive events based on antral follicle counts (Broekmans et al., 2004) which we feel will be as useful as those of Wallace and Kelsey, if not more so, as antral follicle counts show more substantial changes than ovarian volume over all age ranges from 25 to 50 years. Moreover, in direct comparisons between volume and count the antral follicle number has proven to be the best indicator of reproductive age (Bancsi et al., 2002; Scheffer et al., 2003). Also, from re-analysis of data on the prediction of the occurrence of the menopausal transition it has been shown that ovarian volume had lesser predictive power than antral follicle counts (Van Rooij et al., 2004).

If the authors are right in their last sentence that an easily reproducible test for reproductive status opens possibilities for screening for early ovarian ageing, we feel the antral follicle count must be considered a better candidate than ovarian volume.

References


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Reply: ovarian reserve and reproductive age may be determined from measurement of ovarian volume by transvaginal sonography

Sir,

We welcome the opportunity to respond to the letter of Broekmans and colleagues. We agree that the assessment of reproductive potential in women is complex and is likely to include a mathematical synthesis of a number of indicators, both hormonal [anti-Mullerian hormone (AMH), FSH,